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SOME PROBLEMS IN MEDICAL ECONOMICS.*

PRESIDENTIAL ADDRESS.

W. H. FRIZELL, M. D.,

BROOKHAVEN, MISS.

I am before you tonight, not because of any outstanding merit or accomplishment of valor or deeds worthy of notice, but by the friendship of my fellow members who have placed this, the highest honor within their gift, upon me, a representative of the ranks of general practioners of medicine, for deeds and service attempted to uphold the high standards and traditions of his profession, but who feels that he has fallen far short of that glorious attainment. I wish to make public acknowledgment of my appreciation of this honor and to say that in my feeble way I have endeavored to return the commission unspotted to the association as have my worthy predecessors.

It is my purpose now to bring briefly to your attention a problem that is of more importance to us than is industrial or agricultural relief—That problem is medical economics.

Man in his social relations meets many problems that stand out preeminently to engage his attention in economics, politics and science.

By comparison there are some of these problems that seem more to engage his attention—indeed there must be one that occupies the high point.

From the viewpoint of science medicine and surgery are today better equipped than at any former period in the world's history to meet the issues of society, but we can not say so much for its economics.

We pass politics with mere mention to discuss only the status of our medical economics.

In medical economics this one feature or problem is the hospitalization, medical and surgical care of the sick—the conservation of human resources, if you please.

Now, man's society may be classified into three divisions, namely; the poor, the middle classes and the wealthy. Some one has very wisely said that "hospitals are only for the *very* poor and the big rich". This aphorism was most aptly put. We medical men who are intently occupied with the care of the sick of all classes, of course, see this economic problem more vividly than those whose attention is directed along other channels, and whose interests are not along lines of the healing art.

Some methods must be worked out, some measures must be taken whereby the cost of promoting and conserving health can be lowered to the point where the man of the great middle class can furnish at least the necessities of life to his family—including modest cost of maintaining health.

*Read before the Mississippi State Medical Association, Gulfport, Mississippi, May 14, 1929.

This problem has for many years begun to engage the attention of those employing large numbers of men, those who must of necessity conserve man power and efficiency, thus directly affecting their earning capacity and their employees income. Indeed some concerns thus engaged have instituted physicial examinations before employment, annual and semi-annual examinations thereafter, community nurses, etc. These and all big companies who employ large forces of men or women will sooner or later employ these measures of prophylaxis, thereby benefitting themselves financially and their employees physically, morally and financially. However such measures only touch those so employed and their families. They do not include the multiplied thousands of agriculturists, small business men, wage earners, and the millions who work on their own account.

This middle class which constitutes the largest division in the body politic has no such protection of their health except that furnished by the Public Health Department of National, State, or District government. This latter has been a great boon to this special class of citizenry. But since the support of such measures is drawn largely from the people by taxation, this very class that needs help so much, can ill afford the taxation. Their financial condition precludes their receiving the alleviating and preventive aids so necessary.

It is this large class of people who are the backbone of our moral, spiritual, social and political society and who present the most complicated and complex problems, especially in our southland, that we should direct our every energy to devise some way whereby their medical care and hospitalization could be effected within their financial reach.

This to my mind is the biggest, most engaging problem that our American people have before them in their political economy.

One can readily prescribe the remedy, that is quite easy, but it is another thing to fill this prescription.

We are of the opinion that there is only one cure for this prevailing condition, and is the well arranged, well operated Community Hospital, whose doors should be so wide as to admit any class who suffer or require reclamation, from acquired or inherited diseases or impediments.

There will always be the poor, they must be cared for, then the few big rich can command care at any price, but it is this almost countless middle class that causes us the most concern. With the present high cost of bringing medical and surgical attention and hospital care to them, it is well nigh prohibitive.

Let me pause here long enough to say that while physician's and surgeon's fees may seem high, yet you do not find any one of them growing opulent from his profession, indeed if you should find such a monstrosity as a rich doctor, you will find that he acquired his wealth with his wife at the altar, or else he gained it by speculation in other fields than that of his profession. You find no hospitals that more than make their expenses, then how is this Utopian idea to be realized?

This is the engaging question, after we have become thoroughly aroused to the conditions in our economy. How shall they be met? Through what media shall the required results be effected?

Science and economy must each play her part in the solution of this problem. Medical science, as above stated, is very well equipped for her part, but must be better prepared and conserved.

It was the renowned Dr. Oliver Wendell Holmes who said: "Science is a first class piece of furniture for a man's upper chamber, if he has common sense on the ground floor; but if a man has not got plenty of good common sense, the more science he has the worse for his patient."

So science alone can not solve the question, just here Medical Economics must step in to bridge the chasm. She can most effectually work when properly equipped. This then demands concentration of material, conservation of forces and elimination of waste. It is through the Community Hospital only that these can be effectually accomplished. She could concentrate her material by bringing the sick to this institution where all could be cared for more scientifically and cheaply than in many private homes.

She could conserve man force by this concentration further reducing cost. She could eliminate appalling waste by this concentration and conservation. Indeed this type of hospital, this method of hospitalization would revolutionize our medical economics and go far toward realizing our dream.

In this, as in all big governmental problems, funds must be obtained by two chief methods, namely; voluntary contributions and taxes. The former can come only through philanthropies of the living and bequests of wealthy decedents. These have already been bestowed in a measure by a few great humanitarian citizens in establishing foundations to be used under the direction of constituted governmental medical authorities. These have done much toward stamping out contagious and infectious diseases that affect largely the poor and middle classes.

Taxes constitute the other element in establishing the remedy for this problem and can be levied and raised only by the government, National, State or Municipal. Now, these funds so necessary for carrying out such a big undertaking must be guarded jealously, expended carefully and to the very best advantage.

To do this brings us to the point where we see another big necessity—that of a National Public Health Department in our government. It is surpassing strange that we Americans, we who boast so of our civilization, liberties, wealth and social standing, should be so slow to recognize and fully appreciate this big problem, these great economic wastes, and to hasten their correction.

Surely some modern Moses will arise to lead us out of this Wilderness. Our very moral, social, spiritual and financial betterment demand the conservation of health in these three classes, especially in the first and second great classes—those that form the greater part of our social and economic fabric.

MEDICAL ETHICS*

F. M. THORNHILL, M. D.,

ARCADIA, LA.

The definition of medical ethics as given by our best lexicographers is that it is the duties the physician owes to himself, to his profession and to his fellowmen. In most countries either a written or an unwritten code for the government of physicians in their intercourse with one another has existed from the days of Hippocrates down to the present time. This code consists of a collection of rules based on the highest principles of equity, of honor and of justice, embodying the letter and the spirit of the golden rule. Many of these principles were contained in the Hippocratic oath and with but few modifications have been the guide and rule of action of the medical profession from that day until this. Had these principles always been the rule of conduct and practice on the part of mankind in general, Burns probably would never have felt the incentive to write "Man's inhumanity to man makes countless thousands mourn."

Dr. Percival, an English physician, in a small book published in 1807, formulated a code of ethics which it is said with few exceptions made necessary by the advance of medical science and the differences in social conditions is the identical one adopted by the American Medical Association at its or-

*Read before the Bienville Parish Medical Society twenty-five or thirty years ago.

ganization in 1847, and which has been the rule and guide of the medical profession of the United States since that time. In some respects my subject today resembles a certain preacher's text I once heard of which he said was a kind of triangular, three-cornered one, having three main points, the world, the flesh and the devil. He said he proposed touching lightly on the world, to wrestle awhile with the flesh and then he would go straight to the devil, where he would probably dwell for a very long time. Taking up the points contained in the definition of my subject in their regular order I shall first notice the duties of the physician to himself, then to his profession, and lastly to his fellowmen, and if I should not dwell on either point for as long a time as the reverend brother declared his intention of spending on the third division of his subject, I hope I shall at least be able to say something on each that will be of some help to our Society.

As the first and most important duty the physician owes to himself, I would place thorough equipment and proper preparation for the practice of his profession. These involve certain moral, intellectual and scientific qualifications. The physician should be a person of the highest order of moral integrity, imbued with a high sense of honor and a correct conception of justice and of right between man and man. The base, the low and the dishonest and such as seek success by "Ways that are dark and tricks that are vain," should have no place in the medical profession. The health, the lives, the honor, the happiness and all that is holy and sacred to the individual and the family are committed into the care and keeping of the physician. A trust he should seek to guard and to protect with the most jealous care and fidelity. Of course, we have no control primarily, over our mental constitution and natural endowments, for brains and superior natural ability are said to be special gifts from heaven. But individual members of the profession can and should discourage the incapable and the physically and mentally weak from entering the profession. I verily believe that a strong mind in a strong body is more essential to true success in the profession of medicine than any profession or calling in the world. The lawyers have a good deal to say about what they call fine legal minds, I suppose they mean persons of good minds, having correct conceptions of the fundamental principles of the law and a peculiar aptness for correctly understanding and interpreting the law. So I believe that if there are persons of so-called legal minds, there are likewise medical minds. The profession of medicine has to do with the science of life and with the hidden and occult physiological functions of the different organs of the body in health and disease and certainly requires as high an order of intellect correctly to understand them as the law or any other profession. The constitution of the physician's mind should be one of abundant common sense coupled with the ability to think and reason correctly on all subject, especially from cause to effect.

One of the chief duties the physician owes to himself is to seek to improve whatever talent he may have, by every legitimate means at his command, in order that he may be the better prepared to discharge alike the obligation he owes to himself, to his profession and to his fellowmen, for we shall find as we proceed with the discussion of this subject, that these obligations are inseparately connected and interdependent one upon the other. An honest endeavor and an earnest desire on the part of the physician to get the best there is in the science of medicine for himself is a laudable ambition and one worthy of emulation by every member of the profession, while at the same time it is the most efficient and satisfactory manner of discharging the obligations he owes to himself, to his profession and to those who employ him. The goal of professional success is best reached by conscientious, sober, studious habits of life, striving to steer clear

of the vices that so often creep in and contaminate the heart, and dwarf the intellect and which prove the wreck and ruin of many a promising career.

There are many ways by which the physician may improve his professional opportunities. To the young man just entering on the practice of his profession the matter of a location is an important one as it may be the turning point in his life for success or failure. The young physician should seek the location most congenial to his taste, commensurate with his professional attainments and his financial ability to sustain himself, until he has established himself in practice. I believe many young physicians make mistakes in seeking isolated locations in order to avoid competition. An honorable rivalry and contact with educated and progressive physicians will do more to strengthen and develop our professional gifts than any course we can adopt. But we are all creatures of circumstances and should endeavor to adapt ourselves to them. Julius Caesar is quoted as having said he would rather be the first man in a village than the second one in a great city. We should not be satisfied with a mere superficial knowledge of our profession, but should strive for the very highest plane of learning and skill. The public will soon measure our true professional merit and sooner or later we will stand or fall before the infallible tribunal of public opinion. Lincoln's axiom, "That you can fool all the people a part of the time, part of the people all the time, but that you can not fool all the people all the time," is as true in medicine as in any of the other walks of life. Honesty and industrious application to the study of the science and practice of his profession and the cultivation of friendly and honorable relations with his professional colleagues will do a great deal to broaden the field of professional knowledge of the physician and to establish his reputation on an honorable and enduring foundation. Next to the educational and scientific qualifications as a part of the duties the physician owes to himself I would place an acquaintance with and a knowledge of the code of medical ethics. Since professional morals is an important part of medical education it would be a good rule, as has been suggested by some if the medical colleges in the United States were required to furnish their graduates with a copy of the Ethics of the American Medical Association with their diplomas and to teach them rigidly to observe it as their rule of conduct in their professional lives.

In this day and time of scientific advancement and progress in medical organizations every graduate in regular medicine owes it to himself as well as to his profession to affiliate with his parish and state medical societies and thus assist in pushing forward the popular demand for a higher standard of medical education and a more efficient organization. There is a constantly growing public sentiment in favor of higher medical education and for proper legislation to secure it and the physician who fails to discern the signs of the times and to fall in line with the procession is destined soon to become a back number in his profession. The public is becoming aroused as never before to the necessity of legislation to protect the people against the impositions of quacks and charlatans and ignorant and incompetent practitioners in general, and we may confidently look forward to important state and national medical legislation at no very great distant day. At the next session of the Legislature of our own state there will probably be certain legislation proposed vitally affecting the interest of the profession, and which every honorable physician in the state should feel ethically bound to support.

Time and space will not permit me to further enlarge on the duties of the physician to himself and I shall now proceed to notice briefly some of the duties he owes to his profession. This I fear will be the most difficult part of my subject to deal with, as professional competition and

rivalry is the source from which spring most of the disagreements, dislikes and bitternesses that disrupt friendly and honorable relations among physicians and prevent fair and just treatment toward one another. The physician should endeavor to identify himself in every honorable relation with his profession and to cultivate the friendship and good will of his professional neighbors and competitors. Above all he should strive to be honest and just in his professional intercourse with his fellow physicians and to accord to them that meed of praise on all occasions, to which their merits justly entitle them. We should be actuated toward this course of conduct from a sense of justice and for the sake of right itself. There is a double amount of truth in the old adage that "right is might" in its application to the practice of medicine and the physician who has the approval of his own conscience and the consciousness of having accorded to his competitor in the struggle for professional success and reputation, fair and just treatment, wields a most powerful weapon against his less charitable and generous brother. Do not allow envy and jealousy to cause you to disparage the professional merit or traduce the good name of your honorable and more successful competitor. You have all heard what a dangerous and unruly member the tongue is, and by some it has been called the rudder of our ships and therefore should be guided with the utmost care and prudence in order to avoid unjust and damaging collisions with the barks of others while sailing the high seas of professional life. I imagine it would be an easy matter to be generous and just and even magnanimous in the day of success, of prosperity and of professional triumph, but the physician who in the day of defeat and failure can maintain his honor and integrity and accord to his more fortunate and successful colleague fair, just and impartial treatment is the real hero and the one who should challenge our admiration and most sincere respect. It is said of Robert E. Lee whose memory every Southern heart loves and reveres, that in all his illustrious career, he never appeared so grand and great as in the day of his surrender at Appomatox.

The association of physicians with one another in medical societies and attention to the cultivation of social exchange have a softening and beneficent effect on the asperities of professional life. There they meet face to face on a common level where they can talk over their successes and failures and learn to imitate one another's virtues and to avoid each other's faults. There attachments are formed, there acquaintances ripen into lifelong friendships that are both pleasant and profitable, and there a fellow feeling is begotten which makes us wondrous kind. The medical society stands in the same relation to the country physician that the lectures, the alumni association, the polyclinic and the post graduate school, do to the city profession. Before leaving this part of my subject I want to consider briefly the conduct that should govern physicians in the matter of consultations. This is a matter I have reason to believe in which professional etiquette, dignity and decorum are frequently violated either consciously or unconsciously. Consultations are usually had at the suggestion of the patient or the family and friends of the attending physician and in either event presumably chiefly in the interest of the patient. This is a matter in which both the patient and family and the attending physician have certain rights which it is here unnecessary to discuss as all honorable and educated physicians are supposed to be familiar with them. The welfare of the patient is of the first consideration and neither the attending nor the consulting physician should allow any selfish or sinister motive to come between them and their patient's best possible welfare. It is customary and fair for the consulting physician to be allowed to name the hour of meeting. When the hour has been agreed on, he should endeavor to be on hand promptly at that time, so as not

to keep the attending physician waiting or subject him to unnecessary inconvenience and embarrassment. I will omit mention of the preliminary ceremonies that should govern the meeting as most physicians are presumed to be acquainted with them, further than to say that the consulting physician should not enter the room of the patient in the absence of the attendant, or express an opinion on the management of the case that may in any way come to his knowledge. Ostentation and officiousness should be strenuously avoided on the part of the consultant and he should be actuated by an honest and sincere desire to help both the patient and the attending physician and his conduct should be honorable and circumspect in every particular. When the consulting physician has examined the patient and noted carefully his conditions and observed all the symptoms and elicited all the information possible in order to enable him to arrive at a correct opinion, he should announce the same to the attending physician when they should retire to some place of privacy where they can discuss the case. Whatever may be said or whatever difference of opinion may obtain unless absolutely irreconcilable should remain a sealed book between themselves. When the line of treatment has been agreed on of course it is understood that the attending physician should give the necessary instructions to the nurse and that the part of the consultant should not be known in it. It is just and right however at the proper time and in the proper way for the consultant to express his approval of the attendant's management of the case unless unfortunately there should be an irreconcilable disagreement. And in this connection, I want to say that among right minded, honorable, progressive and up-to-date physicians, there should be no very great difference of opinion, especially when the matter of diagnosis has been settled. Consultations honorably and intelligently conducted are calculated to be of inestimable benefit to the patient as well as to the attending physician, and may be the beginning of a lifelong, pleasant, agreeable and profitable friendship between them. On the other hand if the physicians should not be influenced by correct conception of fair, just and honorable professional conduct, they may prove to be the source of a lifetime of bitterness and strife between them, which will be bad for both the head and the heart. Talking with a medical friend of merit and good attainments in New Orleans, a few months ago, the conversation turned on the subject of consultations in which he said that they had been very disappointing and unsatisfactory to him in as much as he had been the victim of very unjust and gross unprofessional conduct on several occasions. He related an instance in which a physician from a distant town of larger pretensions had been summoned to meet him in consultation at a small town a few miles distant from his own and after having seen and examined the patient together and agreeing as to the diagnosis and treatment, they separated. The consulting physician (or rather I believe we should say in this instance, the insulting one) was compelled to remain at the patient's town for the most of the day before being able to catch a train home, and the attending physician having other patients to see, left with the promise to return late that afternoon. On his return he found the family in a very unhappy and distressed state of mind, because in his absence the consultant had told them that he had discovered that the diagnosis and treatment was all wrong and that the patient's life was in great peril. He had had the treatment discontinued and promised them to send appropriate treatment by the next morning's train and had left no word or note of explanation to him (the attending physician). In my own estimation it is impossible to conceive of a baser, lower, more contemptible and despicable conduct than this, and I do hope and trust that no member of the Bienville Parish Medical Society will ever display so base and low a disposition.

I come now to the consideration of the duties of the physician to his fellowmen, the third and last division of my subject. These carry with them, certain private and public responsibilities. Physicians to a certain extent at least are considered the guardian and proctectors of the private and public health. As the family physician they are expected to advise their friends and patrons how to preserve their health when well and to be able to cure them when sick. Physicians are consulted in matters of private and public health and are expected to give their advice and services gratuitously frequently to an extent for which their friends of the legal and other more mercenary and less charitable professions would receive liberal fees. When withering and blighting epidemics overshadow the country bringing death, sorrow and desolation to hundreds of homes, it is to the medical profession that the people instinctively turn for succor and deliverance.

How much physicians have to do with the public health and the safety of the lives of the people in times like these, has been forcibly demonstrated during the year that has just closed. In the face of opposition and amid the jeers and satire and ridicule of a skeptical and prejudiced laity, and in not a few instances members of our own profession, the medical profession of our own state waged a relentless war for the extermination of the mosquito and established the role of that pestiferous insect in the propagation and spread of yellow fever on an acknowledged scientific basis, and are preparing for still greater sacrifices of time and labor in order to prevent a recurrence of the disease in the future. The profession in its organized capacity of the State Medical Society has called a special meeting of that body for February 6, 7 and 8, in New Orleans, for the purpose of formulating a sanitary code as well as to discuss the mosquito doctrine of yellow fever, and to inaugurate a campaign of education and prevention along the lines of that theory. But it is in his capacity as a private practitioner that I wish more particularly to discuss the duties of the physician to his fellowmen. The most binding duty and the one from which there is no escape is faithfulness and fidelity to his patient's welfare while under his care. To cure and prevent disease and to relieve human suffering is the first business of the physician and having once assumed the care of a case he is bound by every feeling of humanity and sense of professional obligation to do everything in his power for the relief of his patient and his speedy restoration to health. These duties often involve great physical discomfort, hardships and outlay of time and means. The profession of medicine is pre-eminently a humanitarian one and the physician as a type of the good Samaritan should be ever ready to do good as he has the opportunity. The rich and the poor alike have a claim on our kind offices and do good unto all is an injunction that finds a responsive chord in every true physician's heart. The physician's only reward will often be the consciousness of duty faithfully and consciously performed. It is not to be understood from what I have said that the physician is required to allow himself be imposed on by the unworthy and the dishonest, but on the other hand, the laborer should be considered worthy of his hire and he that practices medicine should live by his profession. For good and sufficient reasons every physician has the right to accept or decline the care of any private or public charge offered him, nor is it always necessary that he should make known his reasons for declining. The employment of more practical business methods on the part of physicians would be the means of more amicable relations with their patrons and would rebound to a higher sense of appreciation for their services. Gratitude is short lived and the best time to collect a bill is before it has lived out its allotted time of three score days and ten, if by reason of strength it should be able to reach that limit. The physician who is not prepared to brook frequent exhibitions of in-

gratitude and lack of appreciation for honest and sincere endeavor will as often be doomed to humiliating and disheartening experiences. Often when your bill is presented it will be disputed and declared to be exorbitant and yourself to be a first class fake. But many good people and those who sincerely appreciate your services, for different reasons will expect you to discount their bills. Some fairly intelligent people regard it as an ill omen indeed to be sick on a birthday, Sunday, Christmas day or other holidays or to have to pay for medical services rendered on any of those days, thus presenting a phase of ignorance and superstition with which the profession of medicine has had to contend since its earliest history and as an example of his fact and as a fitting conclusion to my paper, I want to reproduce in part what I consider a very pretty little Christmas story which I read in one of my medical journals on last Christmas day.

The writer of the story was called some years ago to see the wife of a Russian recently arrived in this country. She was very ill and he found it necessary to visit her every day for a month, commencing December 15th. She recovered and in due time he sent his bill. The husband in somewhat overdue time, so the writer stated, called at his office to pay it, when he entered the following plea: "Mr. Doctor, dat bill you sendt mein vife, he's all dright, but vone dem visits you make mein vife you makes him on a Grisdmas day, and I vandt you make me a bresent dat visit you makes mein vife ond Grisdmas day." The writer said that the request was so original and so different in tone and spirit from the usual peremptory demand for a large discount that he knocked off the visit made on "Grisdmas" day and made him a "bresent" of it, and that he had received many times the value of it telling the story to his friends.

MEDICAL SOCIOLOGY.*

O. N. ARRINGTON, M. D.,

BROOKHAVEN, MISS.

The purposes of a society are: 1. Maintenance of the life of the society, 2. Maintenance of the lives of its members.

The principal functions are: A defense of the whole, and the preservation of the whole from destructive enemies. It is therefore necessary to have restraints for the individuals and from these restraints or obligations imposed upon the whole there arises individual benefits. "It is obvious that the medical man who removes pain, sets broken bones, cures diseases and wards off prematrue death, increases the amount of life."—Spencer. Likewise, we might draw similar conclusions from the poet, the historian, the lawyer, the minister, the teacher, and the architect, citizens who all add their mite to the benefit of the whole, yet in none of these can we find any that is so interesting as that of the development of medical social science. And we find so little written on this subject.

Those of us who are today living, prospering and receiving the benefits derived from the slow but progressive evolution of society cannot have greater reflective honor than to recognize an appreciation of this slow but sacrificial progress made by those who have preceded us. While we recognize the fact that the father of medicine planted the seed which has produced medical anthroponomics from four hundred years before Christ to the present day; yet we cannot read the history of medicine without being impressed with the fact that there has been more developed within the past one hundred and fifty years than there was from all the time following the life of Hippocrates to within one hundred and fifty years ago.

The ancient Egyptians believed in various methods of cure; some inclined to sor-

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cery, formulae, etc. Others believed in drugs derived from plants and minerals, but the best doctors of that time carefully avoided binding themselves to any exclusive method, suiting their remedies to the peculiarities of their respective patients. This selective method has inclined down to this present day, until what we call regular physicians or surgeons who accept and exercise all truth to the end of relief for the suffering of humanity. The regular practitioner of today might be considered an officer of the state, being duly licensed and obligated by the license given him at graduation. His well-developed knowledge of the science of medicine enables him to operate under well-recognized and proven methods to the great advantage of himself and of suffering humanity, to do the greatest good to the greatest number. We should not lose sight of one main issue, that is the attainment of truth and the publication of this to the end of standardizing these truths in one school, making it impossible for quacks, sorcerers and the dealers of the black hand to ply their chicanery to the grasping hope of the sick and the diseased of body and mind.

Let me, therefore, hasten to draw this conclusion for our great and honored profession. Let us apply well the recognized and time-honored remedies that have proven themselves beyond the vale of experimentation. Let us be slow to experiment and grasp too quickly at the new unproven theories of the novelist of today which glitter and sparkle but for a time and then have to go into the discard. This causes our science to appear to be an experimentation altogether, and before we have established any one fact we find ourselves reversing our former practices, thereby proving to the world that we are unfit to establish new truth.

Quoting, in part, from Harlow Brooks, J. M. A., July 2, 1927, "Misunderstandings have arisen it is true, honest misunderstandings between the profession and some worthy public health activities. Was there ever progress without argument? There is little or none in those activities controlled by the United States Public Health Service, or in those of the state or city health departments when they have been controlled and directed by trained medical men." Such misunderstandings, he says, "have almost without exception, originated when we have been asked to abrogate, to forget, our scientific training, or when our code of ethics has been ruthlessly ignored. . . . What does the physician in family practice resent in the activities of public health? He resents the nurse doing the work of physicians, making diagnoses and dictating treatments which the family physician shall carry out. He resents the underpaid, time-serving employee of the department who, from the wealth of his experience, minimizes to school children the work and ridicules the respect of the family doctor. He resents, too, wholesale vaccinations and other evidences of legal but bad practices. He resents the snap diagnosis of an employee of a department in a case to which he has given serious and experienced study." Suffice it to say that free examination of the poor, that the free public clinic, that the free examination of school children, a good so broad, so benevolent, so charitable, so great when properly carried out by men in our own profession handled and supported by them, cannot but finally work the greatest good, not only to the public in general, but to our honored profession.

"Numberless are the confidences locked up in the bosoms of physicians; and, in behalf of our social order, Heaven is to be thanked they are locked up." Medical men are always to be open and frank in their communications to all social orders of truth but never to be a news box or a source for tattlers to comment upon their sayings. We should keep constantly abreast with progress and mark well our step of vaunted remedies, prophylaxes and cures in keeping with truth. For, as one writer has pointed out, "Should Henry Ward

Beecher come back to his pulpit, he would find his preachment just as understandable and effective as in his day. Should Chief Justice Marshall return to his bench, he would find the law unchanged and his decisions acceptable. But should the most competent physician or surgeon of fifty years ago return he would be at a loss, for the physician would be obliged to study medicine over again, and the surgeon would not be able to do the ordinary work required in the operating room." Just here I do not wish to be infidelic or to spread any suspicion or doubt upon the most wonderful discoveries of science, and I wish to state furthermore that antitoxin has brought to the human race one of the greatest resources of relief to the suffering, but I can recall, in my own short period of practice, when 500 units was used as a prophylactic and 1000 units was used as a curative dose, whereas, now, it is generally conceded by the best authorities that the initial curative dose should not be less than 10,000 units. I can recall further, twenty years ago, calomel was considered an indispensable drug in the care and treatment of typhoid fever, whereas, now, the physician giving a dose of calomel in the course of typhoid fever would be open to severe criticism by our profession and not guiltless of crime in the courts of justice.

I wish to note, in passing, that the practice of medicine has developed, as I think, under the two great divisions: First, the art of medicine was practiced by the ancients and the great medical lights noted in ancient sociology gave themselves more or less to the great art of healing, and one gets the impression that they held their sociological relationship to each other in profounder respect, and in this initial period was developed the greatest medical sociological creed from which we have never, to this day, departed; second, the science of medicine which has come to us principally within the last one hundred and fifty years through a thorough understanding of disease and its causative factor. The principals of these sciences are bacteriology and pathology. Pasteur, Lister and Koch are the initial promoters of the science of from cause to effect. Medical development has been more or less involved in the ecclesiastical influence from the beginning of man. The priesthood originally administering not only to the spiritual needs but to the physical needs also. This influence had a most serious objection to post-mortems and human dissections. Human dissections were not permitted until 1306 and then on criminal bodies from the gallows. It can be seen, therefore, that there was great and sufficient reason for the healing art to be predominant in the minds of medical men of those days. Now that dissections are authorized by legal enactment anatomy of the most delicate structure may be studied. Pathology, bacteriology and serology are made possible by the compound microscope. These sciences have not yet reached their zenith and such new fields as the laboratory or the roentgen ray have perfected the science of medicine to such a degree that the student knows while the artist or clinician does. The advance of these sciences has so elaborated medicine and so widened our knowledge of the healing of the human body that to comprehend the whole field seems to be now almost an impossibility and the end is not yet. The specialists have come into their own and the family physician has been almost minimized to a degree that he can have no place in human economy in the not far distance. We should not wail or bemoan our plight for the evolution of human society has demanded these changes and it should be a congratulatory privilege for us to have met them in so proud a fashion of modern medicine. This rapid development of recent years, however, has almost divorced medicine from church influence, and the science may advance unhampered except from a few anti-vivisectionists who write long and hard in the scientific magazines against vivisection and yet will eat the flesh of in-

nocent lambs slain for their luncheon. But the hospital has replaced for sectarian and religious workers the open field for benevolent work, and this institution has become one of pride to every heart that beats with the impulse of love for human science. This institution has become the medical man's workshop and the medium through which much scientific knowledge is obtained and much art of healing performed. It would now be as difficult to keep people from the hospital as it was ten years ago to get them to it. We could never have developed this institution to its present-day efficiency without the trained nurse.

CRIMINAL ABORTIONS.

There is no segment of the whole social cycle, medical or moral, in general, that is filled with so much grave responsibility as that of the medical man in this phase of his responsibility. The young doctor with his great ambition to win new friendship and the old medical man with his ambitions to favor a long and faithful client has this temptation presented to his door far more often than is generally thought. In reviewing the laws of our great commonwealth of Mississippi we note that the physician's license may be revoked for three outstanding guilts: First, performing a criminal abortion; second, for violating the Federal anti-narcotic laws; third, for habitual drug addiction. So, reviewing the functions, a defense of the whole being a principal fiber, it is necessary for the human race to strengthen itself by the reproduction of its kind. In order to produce the best results in the reproduction of the human strain it is necessary for society to forestall this evil, and we should not put on the soft pedal when it comes to the condemnation of this evil. I do not know of my own knowledge whether any medical man in the state of Mississippi would be so low as to stoop to this form of crime, but it is currently rumored that we have some medical men who are lax in this practice if not actually indulged in the production of criminal abortions. I think it would be well for us to review the whole situation and to loudly decry this practice, and if there be those found among our ranks who are guilty there should be every effort on the part of the medical profession to bring these men to the bar of justice, and if proven guilty, prosecuted to full extent of the law and forever barred from the medical profession as a stench to human society.

LIFE AND SICK ACCIDENT EXAMINATIONS AND REPORTS.

Practically all the heads of business and families of today carry life insurance based upon insurability and life expectancy, as measured by the medical profession. Sick and accident insurance has of recent years been very sporadic and most phenomenal in its growth. An imperfect science like the science of medicine has been depended upon to set the working basis of health and disability from accident and sickness at the doors of the medical man. Just where health ends and sickness begins theoretically is very easy, but when we analyze it as being based upon two great sources of information, first, subjective, and, second, objective, we sometimes find ourselves very seriously blocked in our interpretation of the rights of a client, and we find ourselves called upon to serve as judge and jury in a sick and accident claim. This position is one not very attractive to the highly moral medical man, seeing that the ideas of his client may be in serious conflict with his own judgment in a claim on such insurance. Theoretically, sick and accident insurance is a wonderful thing for the protection of human society, and yet I fear that we are not now to the point in its development where justice and equity can be measured by us for this form of protection. The medical man who may be so inclined, may prepare a claim so that it will work an injustice on the company primarily, but secondarily by upsetting the whole system, and not only making an inequity in an honest business but reacts to the detriment of the entire scheme. So, in this peculiar phase of our social develop-

ment, we need men who will follow the lines of the highest ethical standards.

In reviewing our study it is interesting to note that the art of medicine and the science of medicine arose in the beginning of man from the physical needs of his personal and physical suffering. It is a vital characteristic of the human race that wherever a need arises this need is sooner or later fulfilled in some sort of fashion; man being the highest specimen of the architecture of God. The art of medicine finally being released from ecclesiastical prejudices and the hospital an admirable adjunct of medicine being substituted for their original claim, and certain human bodies being turned over after death for real study and investigation, has released the profession to the acquirement of real truth and knowledge. This development is left largely, and I should say, almost totally, to the personnel of medical men and medical minds. This development has gone on principally, and of right should have been, through two great and outstanding influences, the influence of the medical school and the influence of the medical society. The modern medical school, backed and supported by the best men of the profession of today, has made a wonderful progress and is deserving of our commendation, support and endorsement. In common parlance the medical school takes the applicant for the work commended to them for their moral character and intellectual attainments in the form of educational acquirements and through a standard, studious process of graded teaching and training, undertakes to mould the medical fiber of our profession for tomorrow. It is not difficult, if I may be allowed to judge, to weed out the intellectual weaklings or those not competent to take the scientific training and perfection; but I have some reservations in mind if the schools are doing enough in looking into the character of the students of medicine as they should.

Now comes last, but not least, the medical man and his society. The organization of medical men into medical societies comes in for the lion's share of praise for all of the attainments of modern medicine and I think the fact that medical societies have developed principally during and since the eighteenth century, that the outstanding discoveries in medicine have been since that date, is fair proof of this assertion. Also reviewing it is a fact that the example of New York was followed in the legalizing of medical societies and by 1850 nearly every state in the Union had laws enacted providing for medical societies.

The Woman's Auxillary, a development of recent years, has an enviable scope of social work in the profession and is living up to that expectancy as the work of noble women always does.

During the student days of the medical man he forms his ties of friendship as binding and as lasting as the endless circle of the wedding ring, and it is easy for him to cultivate a love for his calling, teachers and his college chums. On entering the career of a practitioner he finds his old companions scattered to the four winds of the earth and faces the competition of the world for a survival of the fittest. A few of the weaker minds and weaker characters change their schemes with methods of prey upon the sick and the uncanny. A few, and I would that there were more, load their hearts with a passion of love for their fellows with a determination to follow the truth as found in the true science of medicine, recognizing the opinions and finding of their fellows, associating themselves with their medical societies and taking no opportunity to back-bite and pulling hard to a common good and to a common end. I know no better criterion to work upon than to insist that those who enter the study of medicine be required to stand as exacting test morally as of mental attainments and for us as older practitioners to purge our ranks

of those who are unworthy on account of violations of the laws of the country.

DISCUSSION.

Dr. G. S. Bryan (Amory): Mr. President and Gentlemen: This is a very important subject that Dr. Arrington has brought to us for consideration, and I also think it is a very splendid presentation of the subject, and I am a little bit hesitant about undertaking to open he discussion of the subject, yet it is with much pleasure that I do.

We are taught in Scripture that no man lives unto himself, and no man dies unto himself. It is true, I think, I know it is true; it is particularly true of Doctors, yet I fear that we as Doctors think very little along that line. Dr. Arrington brought out that every bone set, every bone or lesion was not only a service to the individual, but to the public, and that is true, but in the field of curative medicine I think we can do the most good as socialists—it is in this field of medicine that I think we can do the most good. I want to illustrate by a story that I used to tell. Soon after the World War, as that is the only war I ever remember, there came into my office a man in uniform. He introduced himself to me as Maj. Somebody, said he belong to the United States Public Health department; that he had been loaned to the State of Mississippi to make a malarial survey; that he had come into my county, and naturally thinking the county health officer lived in the county seat rather than out in a small town, he had gone first to the county seat and inquired for the county health officer. At that time I was acting as county health officer, and he said to me "I am leaving the county, and only came up to present my compliments to you and tell you why I am leaving your county without putting on the survey." He said, "Well, in your county site I visited each of the Doctors and they measured up, I think quite well with the Doctors in any town in the state of Mississippi." He said, "I got very little sympathy—very little co-operation. I went to one of the most prominent physicians of the town and asked him if he was willing to cooperate and he said (pardon the language) "Hell, no why should I cooperate with you in stamping out malaria? I asked him "Pray, why shouldn't you?" and he said, "For the simple reason that more than 50 per cent of my work is from malaria." He said, "I am shaking the dust of the country off, because I find that sentiment here." Pretty soon he had shaken the dust of the State of Mississippi off and was gone. I am wondering if he found that same sentiment elsewhere.

It was my good fortune some years ago to take a small part with Dr. Darrington and others present, in putting on a program of public health and hygiene in the State of Mississippi. We were up against a stone wall. There semed to be no open avenue, and I remember that I myself suggested to the Board that we put on a campaign of education, go direct to the people, and it was something new at that time. We hired a man to canvass the state and talk to the lay people on the subject of health and the prevention of disease. It is now bearing splendid fruit. Mississippi is coming into her own, so I want to say this not as a Public Health officer, not a member of the staff of the State Board of Health, but as individual practitioner, I want to appeal to every one of you and try to impress on you that I think the most important duty devolving on any physician is not to cure sickness, but to prevent sickness, and thereby lengthen the span of human life and add to the happiness and to the prosperity of the state. Last week in a convention that was held in the city of Memphis—I think it was Child's Welfare, I forget the name of the convention, but there were 2500 delegates there and Dr. Lyman Fisk made this rather startling statement, startling to me at least. He said, "I believe that it is possible in the lifetime of those now living to extend the span of human life from 45 to 60 years, not by curing disease but by teaching the people the cause of sickness and showing them that the prevention of disease is almost always near at hand. Forty-five to sixty years added to the span of human life. Isn't that worth striving for friends? I think it is.

Dr. O. N. Arrington (Closing): Mr. Chairman, this is rather a dry subject, and knowing that we are all anxious to get through, I will just give the rest of my time. I thank Dr. Bryan and the people for their patient hearing, and I think there is room for better development of the auxiliary of medical men. I make it a point that the auxiliary has done greater work toward the development of the social side of medical work in Mississippi than any other one function I know of. I thank you.

THE RELATION OF THE SURGEON AND THE ANESTHETIST TO THEIR PATIENT.

ISIDORE COHN, M. D.,†

NEW ORLEANS.

"Whatever triumphs still hold the mind,
Whatever gifts shall yet enrich mankind,
Ah, here, no hour shall strike through all the years,
No hour so sweet as when hope, doubt and fears,
'Mid deepening silence watched one eager brain
With Godlike will decree the Death of Pain."

Weir Mitchell.

Anesthesia as a specialty is young. In spite of the fact that the birth of anesthesia antedated Lister's remarkable work by nearly twenty-five years, specialization in anesthesia is well within the memory of many of you who are members of this Association.

The first to practice anesthesia as a specialty in the United States was Dr. Thomas Bennet. The British Association of Anesthetists was organized in 1897 with Dr. Buxton at its head. The American Association of Anesthetists was organized in 1912 at a meeting of the American Medical Association. Your own Association was organized in 1922 through the efforts of Dr. Hamilton Long.

The first to practice anesthesia exclusively in Canada was Dr. Samuel Johnson in 1907. One of the first to devote his practice to anesthesia in the South was Dr. Ansel M. Caine of New Orleans, who began his active work in 1909.

It must be a source of pride to the American Anesthetists to note that our Canadian neighbors acknowledge that Americans were pioneers in anesthesia, and in particular Dr. Samuel Johnson has stated that Dr. Frank McMechan "stands foremost as the great exponent of the development of the art."

It is a privilege to address an organization whose guiding spirit, Dr. W. Hamilton Long, has been acclaimed by national and international bodies as a leader in fostering research, advancing teaching and who, by his untiring efforts, has done so much in the service of Anesthesia.

Of him it may be said, as has been said of Dr. Sidney Rawson Wilson: "For him there is more in anesthesia than the mere production of sleep. In it is wrapt up the mystery of life and death, of dreams and awakenings, of the separation of soul from body."

You have the privilege of following in the footsteps of those who, according to the late Sir William Osler, gave the "greatest single gift ever made to suffering humanity; at a single stroke the curse of Eve was removed."

Oliver Wendell Holmes said of the introduction of ether and chloroform, "The fiercest extremity of suffering was steeped in the waters of oblivion and the deepest furrow in the knotted brow of agony has been smoothed away forever."

* * * * * * *

In discussing the subject of the Surgeon and His Patient several problems present themselves:

1. What are the surgeon's obligations to the patient?

2. The relation of the surgeon and the anesthetist: is the anesthetist to be part of the surgeon's staff, or is he to take his place as a consultant?

3. What is the relationship of the anesthetist to the patient: is he to be merely one who puts the patient to sleep so that the patient will be oblivious to pain, or does he appreciate his responsibilities? Is he to be prepared by proper training to meet emergencies and what constitutes proper training?

†Professor Clinical Surgery Tulane University; Associate Senior Surgeon, Touro Infirmary.

4. What should be the relationship of the surgeon or the anesthetist to death, both immediate and delayed?

In approaching the first of these problems, the relationship of the surgeon and the patient, I must quote rather freely from a previous paper of my own on this subject.

"A surgeon should appreciate, above all, that expression of Emerson, 'Character is higher than intellect.' You must agree that the surgeon without character is not worthy of the name."

"When the patient selects the surgeon, he does it in the pursuit of happiness; without health there can be no real happiness. Disease distracts one's attention from those things which he could do to contribute his share to the welfare of the community. In this light our responsibility looms large."

A surgeon should appreciate that he is dealing with that which can not be recreated by the hand of man; that the all to a family is in his hand materially, that through neglect or ignorance, an irreparable damage may result.

To relieve suffering, or prevent it, is certainly the most merciful act given to man to do.

The appreciation of our moral responsibility is the first step in the line of duty to the prospective patient.

Anesthesia has made modern surgery possible. Modern surgery has made the development in anesthesia a necessity.

Crawford W. Long, Morton, and James Y. Simpson made their contributions before Pasteur.

Lister linked the two great discoveries and has made the chain complete.

Increasing knowledge demanded that new fields which were opened to surgery should be invaded. The problem which confronted surgeons has been not only to make surgery possible, but to make it safe. Many notable workers have invaded the field and have contributed their share, but in recent years the most notable work has been the work of Luckhardt.

His contribution is the most valuable because it represents a scientific application of a principle which is based upon research.

The most notable contribution in recent years has been the skilled anesthetist and not the particular drug, according to Finney.

Many of you like me can look back over a period of observation of twenty-five years. During the early part of that period we recall the long struggle which preceded the stages of anesthesia, and the many days of nausea, persistent vomiting, urinary suppression, delirium and the not infrequent fatality which followed in the wake of the operation.

The anesthetic risk was great because of the nature of the administration and the toxic nature of the drug.

Local and regional anesthesia were developed as a means of obviating the dangers incident to general anesthesia.

Surgeons needed capable anesthetists. Demands in any field are never unanswered long. Hewit, Buxton, Bennett, Gwathney, Long, Caine and others arose to serve the cause.

As a class surgeons are men of character. In their desire to perform their duty, with the least possible morbidity and mortality, it was not long before surgical literature became flooded with pleas to "save the hundredth man" and to conserve the patient's resistance.

In 1909 R. S. Cathcart at a meeting of the Southern Surgical Association said: "The office of the anesthetist is second to none at an operation, for upon him depends much of the successful termination of a case. Timidity results in an imperfect anesthesia, while, on the other hand, ex-

cessive use of the agent may kill the patient on the table or produce serious post-operative complications. The profession should encourage men to become skilled anesthetists. He should be thoroughly reliable, a man of ability and good judgment, and before the selection of any agent for an anesthetic is made cases should be reviewed and patients examined with him, and upon his advice the selection based."

It remained for Yandell Henderson in 1911 to bluntly reveal the truth in regard to fatalities following ether anesthesia. He said: "The majority of all deaths under anesthesia fall into one or the other of two general classes: those of primary respiratory failure, and those in which sudden cardiac standstill is the critical feature. The attitude of surgeons towards these two forms of death presents a peculiar contrast. They blame the first on the anesthetist, the second on the patient."

"The principal point which I wish to urge in this paper is that in the large majority of fatalities of the cardiac type these expressions are mere excuses."

"I believe that these forms of death and in fact by far the greater number of all deaths under anesthesia are fundamentally due to acapnia resulting from the excessive pulmonary ventilation of the stage of excitement."

Raymond Coburn in 1913, pleading for better anesthesia, said: "To handicap Nature needlessly with the anesthetic is sometimes to turn the tide of battle against the one we are striving to aid.'"

Following the valuable teaching of Henderson, we find A. D. Bevan in 1915 advocating "drop ether and gas and oxygen."

In 1927 the American Surgical Association expressed its interest by way of a symposium which was participated in by Bevan, Richardson, Finney and others. In summary their conclusions were for better anesthesia. We need more time devoted to teaching of the subject and consequently more skilled anesthetists. Finney said: "The greatest advance toward the solution of this question of anesthesia is the introduction of the trained anesthetist."

Surgeons are no longer willing to permit the use of the expression "unavoidable surgical calamity." Cutter say: "In the ultimate analysis poor judgment is more often a tenable expression."

In spite of the above and more, we find that A. E. Rives has recently stated that anesthetist's associations have met with opposition by organized medicine. He asks the question; "Whether this is because of the normal tendency to retard progress, and out of ignorance of the subject in question, prejudice, jealousy or all three we do not know."

My own observation and my contact with surgeons as a whole is certainly contradictory to such statements.

There is neither ignorance, prejudice, nor jealousy in the minds of leaders in either field, but there is a demand for better work, based on more information in each branch.

See what C. Hirsch has to say: " 'Safety first' is the slogan we all have before us. A path can be found through the anesthetic jungle, where dread spectres of sudden death once lurked. These spectres can be banished. The seashore of our anesthetic dream need not in future be strewn with wreckage. The barque of life under our guidance need not drift from its anchorage in a sheltered harbour, nor plunge into a storm tossed ocean, to be prosecuted by tormenting winds or battered by immense waves."

The late Stanley Wilson insisted on the value of breath-holding tests, blood pressure and other equally valuable means which are available to the anesthetist for the benefit of the patient:

Charles T. Hirsch said: "The chances of the patient may be likened to that of a

snowball in hell, unless these matters be considered and we nourish our minds with the combined vintage of the experiences of those who have devoted thought and time in these side lanes of research, which have proved not to be blind alleys."

These quotations emphasize the true partnership of responsibility which exists. Let us separate, if we can, the responsibility."

The surgeon must realize his moral responsibility not to undertake a surgical operation on a patient until he has a complete record of the individual patient's physical condition. The existence of a defect which is mechanically remediable is not an indication for surgery. If the risk involved is greater than the prospects for a safe recovery, the operation is not justifiable unless it is a question of death without intervention.

To decide this question judgment is required.

Judgment is the result of observation, but this must be done with an inquisitive eye; otherwise, time and opportunity are wasted.

Experience enables one to form judgment more readily than his less experienced colleague. But if that experience has not been coupled with a progressive appreciation of the ever-increasing number of laboratory tests, judgment then will be fallacious in an ever-increasing proportion, because of the fallaciousness and undependability of intuition.

Even with the exercise of the greatest care errors in judgment are made.

In order to reduce morbidity and mortality the surgeon must be qualified to approach the diseased organ in a direct manner. This can be done by the appreciation of the value of detailed anatomic knowledge.

This coupled with gentle manipulations shorten the operation and diminishes the insult from the operation.

If the surgeon has been honest in his advice, painstaking in the analysis of the patient's vital capacity, properly prepared to execute the operation, and careful in the selection of a qualified anesthetist, he has done all but one thing within his power for the welfare of the patient.

The one thing left to be done is, with the counsel of the anesthetist, the selection of that anesthetic best suited to the needs of the particular patient.

Keen said that "the ideal anesthetic will abolish pain by the abolition of consciousness, but without danger to life."

All are agreed that the ideal anesthetic has not been discovered; that all anesthetic agents are toxic in a greater or lesser degree; that the selection of the anesthetic is a matter of greater importance.

Primrose, Ross and Harding have within the last two years discussed in their publications the subject of training of the anesthetist.

Harding's expression summarizes a great need "to be a specialist takes two to three years to learn his work. He must not only know how to give an anesthetic, but when to give them, and when not to give them and what anesthetic to use."

Sidney R. Wilson said: "In no sphere of practical medicine have the extraordinary developments in physiology and pharmacology exerted a greater influence than in the realm of anesthetics."

A. L. Fleming in his presidential address before the British Medico-Chirugical Society stated: "It is I think no exaggeration to say that the goal every modern anesthetist tries to keep in view is to conduct his administration on purely physiological lines; his ideal is to keep and to leave the patient normal or physiological and it is chiefly by observing certain rather complicated reflex phenomena that he gets near his goal."

If this be the goal how can we expect it to be reached unless the men who qualify pay more attention to the results of modern physiological research.

So long as anesthetists as a group are not trained in physiology, pharmacology, chemistry and physical diagnosis, so long as they are willing to walk into an operating room and administer ethylene and other anesthetic agents without ever having seen the patient before; so long as they are unwilling to accept responsibility for complications and even fatalities; so long as the anesthetist feels a personal affront if the suggestion is made that the anesthetic has been faulty and that some post-operative complication has been due to some failure on his part, just so long will the anesthetists not reach the goal which their position in the operative team should be.

How can we continue to speak of conserving resistance and other superlative idealistic conceptions when our practice does not co-ordinate with our profession.

Let us hope that the dawn of a new day is not distant, then as now the true anesthetist may well wear the badge of the Canadian Anesthetist, "We safeguard those who sleep."

STANDARD MILK ORDINANCE.*

A PLEA FOR UNIFORMITY IN PROCEDURE AND ACTIVE SUPPORT OF THE MEDICAL PROFESSION.

L. S. FRANK, M. D.,

MONTGOMERY, ALA.

The subject of milk control is like every other detail subject, so vast that all I can hope to do in the short time that can be allotted to any one paper in a course like this, is to jump swiftly from crag to crag and touch on the outstanding peaks of the subject, and then look back and hope to see those peaks lined up behind us, and hope that you who are interested may possibly look back or retrace your steps and investigate what may lie upon the slopes of the mountains over which we have jumped, and possibly you can get down to the valleys. I therefore will have to speak quickly and possibly a little bit more concentratedly than you like. I will try to outline the subject about in this way.

1. Why do we need a standard milk control program?

2. What has been the history of the standardized milk program in the United States?

3. What does the future offer, and how can the Medical profession relate itself to it in such a way as to be most helpful to the movement?

First then in regard to the reason for a standard milk program. Why do we need standard methods of milk control? I think I can explain that most simply, most clearly by saying that it is analgous to the need for a common language; that it is analgous to the need for a common monetary system in this country; that the business of a standard milk control is very similar to what would be true if we were to have in Meridian the use of dollars and cents, in Jackson the use of marks, and in

*Read before the Mississippi State Medical Association, Meridian, Miss., May 8-10, 1928.

Gulfport the use of the lira. We would not understand each other, and in not understanding each other we would fail to have confidence in each other, and failing to have confidence in each other, we would fail to make the ideal progress.

Certainly the history of milk control has demonstrated that we have failed to make the ideal progress. I do not know how many of you, who have had occasion to investigate the source of the milk supply of this country, know as you go from state to state that it is impossible for you to have confidence in any milk supply, and if you move your family, it takes you quite a while to know that the milk is what you can trust. You do not know the Health Officer, you do not know that you can have confidence in his work. And if you know what I know, you know that the vast majority of health officers have far less control in the milk department than anywhere else. Certainly milk control has not been taught in our public schools. Certainly it is not yet being taught in our schools of medicine, in our schools of engineering, from which some of the men are taken, and the truth is that the majority of men when they are given milk control know very little or nothing about the subject, and therefore we are unable to have the confidence in the milk supply which we should have and which would induce us to drink as much of it as possible.

We need a common language in order to have confidence in each other. Now I think it goes without saying that if we were to have a standard method of milk control, we would have a better milk control. The first item is one of mutual confidence, the second is excellence. Anything that is not standardized embraces a big factor of low quality stuff. You know very well that when milk control is handled in all of the cities of the United States in a haphazard way, what a big proportion of the cities are going to have a low quality supply, therefore we need standardization. First because we need mutual confidence, and second, because by standardization we will increase the level of the milk quality. I think that is demonstrated by the fact that there are reported in my office approximately fifty epidemics of milk disease every year in this country alone. I know there are many more from milk disease than are reported in my office. That does not represent more than 25 per cent of the amount. Any condition which results in fifty milk disease epidemics offering per year, with the knowledge that there must be many more, is a serious thing and therefore from the stand-point of increasing and improving the quality of milk supply we need a standardization of our methods.

Thirdly we need standardization of our methods because the problem of milk control is getting into the transition phase. If you look back on the years during which America has grown, it is easy to conceive of the fact that in the past milk control was a purely local question. Each city and town derived its milk supply from small areas. Now that we are developing, that our transportation system is growing, we find that milk for one city is apt to come from an enormous area, so that Florida is getting milk from Wisconsin. We ship milk from Alabama to Washington, D. C., and to bring it closer home the city of New Orleans draws a lot of milk from Mississippi. In other words, it is an interestate problem, and I think your state health department is very keenly aware of the fact that some sort of standardization is necessary in view of its experience with the problem of the milk supply that goes to New Orleans. We have to have common understanding between the states. We can not afford to have Louisiana have one set of standards, and Mississippi another. The State officer of Florida says to the state officer of Alabama, "We are taking milk from you, will you tell us that your milk is safe from the Florida standard?" He answers "I wish I could," and if Florida was the only state that Ala-

bama was shipping milk to I could take Florida's standard and tell him that it complied with his unit, but unfortunately Alabama is shipping milk to a great many states, and while we would be glad to apply Florida's standards, we will be hanged if we will apply ten different standards. The expense would be exhorbitant, so the only thing we can say is we will apply Alabama's standards and tell you if the milk complies with our standards. So what we really need is this common system by means of which we can have confidence in each other and which will facilitate interstate milk shipments, because gentlemen what we need is to reduce as far as possible the resistance of low milk supplies. Milk is the greatest food we have; it contains everything necessary for the ideal food except iron, and iron you can get in other ways, and we certainly do not want any resistance to a low milk supply, and therefore from that standpoint we need standardization.

Now having outlined the general need for standardization, I would like to call attention to one element—I pass over quickly—that of confidence of the dairy men in ourselves. Until the dairy industry feels that we, the health officers know what we are talking about, it is not going to comply cheerfully with our demands. Until they get away from the idea that every health officer is working up in his mind his own idea of milk control, that it is a personal attack on the people, that it is an individual thing against the dairymen of that community, so long as every health officer has a different method of control (most of them must be wrong), as long as they maintain that idea, they will resist our demands to bring about a better milk supply, and therefore again we need a standardization of our milk control problems.

Having outlined rapidly the average program, I would like to give you a history of the program. It began in 1922 when Alabama asked the public health service to help it organize a standard state program, and it has progressed rapidly to the present time. In Alabama we worked up a standard program that would do, and it has resulted in a standardization of our ideas of that which is the highest grade of raw milk, the safest form of Pasteurized milk. There will be Grade A raw milk and Grade A Pasteurized, so that wherever we go over the state of Alabama we know that Grade A is the best, and we will know where we can get the grade with which we can be satisfied. That in general is the program, without specifying definitely that all grades shall be pasteurized, but not being absolutely mandatory because of the consequent factor of our inability to convince the average city council as to the kind of milk control that he should pass.

In other words despite the fact that we know that the safest grade would be milk you should produce and then pasteurize, realizing that you can not get all city councils to pass that kind of an ordinance, what we standardize upon is quality of raw milk on the one hand and quality of pasteurized milk on the other hand, and that requires every dairy man who produces a lower grade to carry it and also grade liberally. That is the system which we have put into effect, the outstanding feature being the grading system. We recognize that we can not force immediately all dairy men to produce the highest grade, and to denominate the different grades and make the highest stand out from the rest. The history has been that Alabama has very rapidly put that program into effect. Thirty-nine cities pasteurize in Alamaba and in five years so far as we have been able to recognize, there hasn't been a milk form of outbreak of disease in the State of Alabama—that has been the outstanding result.

Now to progress a little further with history, that work attracted sufficient attention so that other states began to adopt it, and now 14 states are operating under this milk program with over 200 cities adopting the ordinance, and it looks as if

there will not be any generations before most of the cities in the United States will be operating under one standard program. I do not know whether the future will go beyond the American nation or not. I will come back in a moment to a letter I got last week from an Italian in regard to this Milk Code, but I want to say now in regard to the relationship of this medical profession to this work, that the beggest help they can be to this program is to advise their patients in all cases to take only the highest grade of milk. If you are in a city that does not afford pasteurized milk, take Grade A. raw milk. The difference is pratically very little. On the other hand if you have a pasteurizing plant and you are not quite certain that you can depend upon your patients themselves pasteurizing the milk, recommend that they use Grade A pasteurized milk, and if you are located in a city that hasn't passed a standard milk ordinance encourage your local health officer, and your city council, to get it passed so that it won't be very long before all of the cities in Mississippi will be under the safest form of milk supply, and wherever you are you can depend on safe milk. Already fourteen cities have passed the ordinance and I understand twelve more will shortly do so. We are large enough and in position to pass this ordinance, and I hope the medical profession will get busy and see that this is done.

DISCUSSION.

Dr. W. E. Noblin (Jackson): I was just sitting there wondering what his Italian friend would say had he heard this wonderful paper—what he would do with it. I am afraid he might kidnap him. I certainly enjoyed the paper—I think it is wonderful. Of course, just recently having gone through with voting on all the standard ordinances of milk control it is worth quite a bit to me, and he has covered the ground so thoroughly there is little left to say. I just wanted to mention one or two things, and one is what he has to say relative to the physicians and their patients. I believe that the physicians as a whole are too quick to carelessly recommend milk. I believe that is misleading a great many parents who follow this advice without first having looked into the whole thing. Another thing, I think we ought to discourage the giving away of milk until we have a standard milk ordinance. We have junior leagues, auxiliary leagues, American legion and other people who are giving away a tremendous amount of milk. Now that milk is given on the basis of underweight. They have no record as far as the donors are concerned as to whether or not that milk is pure or not. For one thing that child has never been examined from any angle, as to whether it was only milk it needed, or whether it was down from defects, so I think the best thing for the health officers to do, until we get the ordinance, is to discourage the wholesale giving of milk by the local people. Now the junior ladies are making a specialty of recommending milk to infants and pre-schools. To me that really is a little bit of a dangerous situation. In the first place, the organization hasn't looked into the subject; they haven't looked up just where they get the milk, and in some instances through whose hands it has been handled, and I really think we had better do a little bit of discouraging of milk as much as we have been boosting it, until it is standardized. Now, we have over in Jackson a big supply of milk coming from nine different counties. We had no check on tubercular-tested cattle; we had no check on the typhoid carriers. Of course, we do have a check on the bacterial count and the butter fat. There have been just lots of that milk given in Jackson, and the American Legion think they have done a wonderful piece of work, and, had they had a milk ordinance, they would have. They have given as much as $80.00 worth of milk a month. And I would like to say to the physician in his discussion of this fact with the mother, as Dr. Frank has brought out, be absolutely sure of what milk you are going to give. As time is short, there is nothing I can add to that, but I would love for the health officers and the physicians to look at the danger side as well as the food value and the condition of the supply.

Now, one more thing. I believe that the county health officer of the unit should function from a money standpoint in favor of milk men. I believe our offices should be used to further profit the production of milk. To help that group we should function to a certain extent with the Board of Trade, we should assist the dairyman in every way we can, and then give him information as far as we can of what has been going on in other states. I enjoyed Dr. Frank's paper and I hope we will have him next year. I thank you.

Dr. D. V. Galloway (Clarksdale): As one of the younger members of the association I think it will be presumptious of me to attempt to discuss this paper, but when we go into a house as a doctor, we can ask the patient how he feels, what is the matter with him, and he can give

us information about himself and his symptoms. In Coahoma County at this time we are undergoing the application of this standard milk ordinance; we have had it about two months, and I can tell you of two reactions we have had so far. One of them is that some of the people have said, "You have gone to work to try to standardize this milk here—why have you taken only milk? Why don't you take all foods? Why don't you go into the houses and certify them? Why isn't all other food as important as milk?" And then there is another one from the dairymen. They have been required to secure rather expensive equipment, some of them have spent as high as $15,000 in new equipment to meet this ordinance, and they say, "You are making us spend money on new equipment," and so they are beginning to look the cows over—they think that while they have been satisfied with any kind of a cow previously, that now that they have this fine equipment they want to have good cows. The county demonstrating agent could not get them very much interested in better cattle, but now they are beginning to look on cattle differently because they are putting on fine trimmings. These are the two things we have noticed in putting this standardized ordinance into effect. Thank you very much.

Dr. J. W. Brandon (Woodville): I would like to ask Dr. Frank what has been the dairyman's attitude towards milk inspection in Alabama, and how much increase in production and in sales there has been under this regime?

Dr. F. M. Smith (Vicksburg): I heard Dr. Frank some four years ago at New Orleans when he first began talking this standard milk ordinance. I confess I didn't understand it then, and perhaps I had better confess I don't understand it now, for I haven't digested all that is in the Code, but I do want to decide this thing if we are going to be health officers, if we are going to keep the fine thought and purpose in our minds of seeing that the citizenship of the country have one of the best foods produced in the most wholesome way, it is up to us to study that Code, and I mention the reasons for same.

I believe that we are going to have a part in the standardization of this milk ordinance, that we are going to put 12 inches in a foot, ten dimes in a dollar or 100 cents in a dollar; that we are going to make it work through all the valleys and not on the mountain tops, as he said. We have got to master this thing and understand it and go into it as systematically as he has tried to show us today. We have records to keep in our offices. I do not think that we should be so much concerned in the economic situation. That is not health work, as I understand it, though I do think it is well to have some consideration for your dairymen, but we have to do something for the protection of the babies of the country. Now, then, to make this come home—the Jewish rabbi called up my office the other day to know if we could furnish certified milk; said his daughter was going to bring his little grandchild down to visit him, and he wanted to know about the milk. We told him we had Grade A raw milk, which was identically the same as certified milk. But if we are going to be health officers we want to keep those records correct in our offices. We want to post just as regularly as does the bank; we want to report every laboratory report to the dairy men; we want to record it on our ledger, so that any men or any citizen in that city dropping into our office at any time can see the records as they stand and the indisputable fact as to what that county is doing. I am glad always to hear Dr. Frank. I have had a varied experience in the health work. I have worked in Alabama, Louisiana and Mississippi, and have had this milk ordinance to deal with on various occasions, but as the time goes by, I know that here in this field the health officer can contribute the greatest amount of service to the people he is serving.

Dr. L. S. Frank (closing): The two questions were, first, as to the attitude of the dairymen, and, second, as to the increase in consumption, or the effect on milk consumption. There was some response to the program last January that seemed to threaten for a moment the Federal appropriation for this work. I felt that it was desirable that not only I report to Washington what the attitude of the dairymen was toward the work, but that they be asked through outside channels about it; therefore, I suggested to the Surgeon General at Washington that he get directly in touch not through the sub-office, my office, with the health officers of some 98 American cities which had operated under the program for about a year and a half or two years, and, therefore, long enough to give them a chance—the dairymen—to make up their minds as to whether they liked it or not. Of the 98 cities to whom inquiries were addressed on last January by the Federal Government, which inquiries were something like this: "What do the health officers think of the ordinance in your city now that you have had it for a year and a half or two years?" and "What do the dairymen think of it and what is the effect on milk consumption?" Of the 98 cities some 80 replied, and in those replies were contained not only the reaction of the health officer, but the reaction of as many dairymen as he could get together on short notice to send in their attitude. Altogether there were some two or three hundred different replies from those 98 cities, and with just two exceptions they were favorable from the dairymen. Every one

from the health officers was favorable. One exception from the dairymen was a city that had not had an ordinance very long and the dairyman said that he thought the ordinance ought to be adjusted to each local community. Just what he had in mind I do not know. The other objection was from a dairyman in Montgomery, Alabama, and when we investigated we found it was a joke. He was asked what he thought of the ordinance, and his answer was "It is fine for the public but hard on the dairy men." When I investigated it I found that he had said, "I don't want to send a wire to Washington," and he then began to be jocular and said, "It is all right for the public but hell on the dairymen." He didn't send it that way, though; if he had we would have known it was a joke, but as it was worded we thought it best to investigate it and find out his reason.

But getting right down to facts many, many telegrams were received from the dairymen in about 90 cities and only one was the least unfavorable. When that big a percentage of dairymen think an ordinance is fair, you can depend on it being fair.

For the second question, I can better answer that question by giving the effect on milk sales rather than on milk examination, because we do not know what has happened to that part of the public which drank milk from private cows. The sales of market milk in 14 Alabama towns where we have made extensive research indicates that the sales have increased over 100 per cent; that the present amount of milk consumed is over 200 per cent as much as it was before. That is a tremendous figure—extremely significant; and I think one of the gentlemen who said we should discourage milk consumption until we get a standard milk ordinance is right. We ought not to delay getting this ordinance though. My own philosophy is this: drink safe milk if you can get it, but drink milk. In other words, to put it this way, milk has done far more good than it has done harm. All of the harm which an entirely uncontrolled milk supply can do is not as great as the good it does uncontrolled. If we keep that in mind we will realize the truth of that rather trite statement. Now that doesn't mean that the gentleman who spoke is fundamentally wrong. If he will translate it, he will twist his attitude a little bit, and say, instead of devoting your energy to increased milk consumption until you have good milk, increase your efforts and we will get a milk ordinance.

THE SURGICAL TREATMENT OF PULMONARY TUBERCULOSIS.*

ALTON OCHSNER, M. D.†

NEW ORLEANS.

Willis is given credit as being the first to employ surgical means in the treatment of pulmonary tuberculosis. In the seventeenth century he reported a cure in a case of tuberculous cavitation following the production of a "fontanell" on the diseased thoracic side. In the eighteenth century numerous reports were made of cases of pulmonary tuberculosis treated surgically by drainage of the pulmonary cavities. The drainage of the cavities was followed, in the nineteenth century, by an attempt to cure the process by injecting an antiseptic into the lung (Mosler). Following the injection treatment of pulmonary tuberculosis an effort was made to remove the pathological process surgically. Bloch was the first to attempt this but was unsuccessful. Tuffier first successfully removed surgically a small tuberculous focus at the apex of a lung. James Carson, in 1821, first suggested that artificial pneumothorax be used in the treatment of pulmonary tuberculosis. Forlanini, in 1882, reported cases successfully treated by the introduction of gas into the pleural cavity.

In 1888 J. B. Murphy reported five cases which had been benefitted by the production of an artificial pneumothorax. De Cerenville, in 1885, was the first to resect ribs, in order to collapse a pulmonary cavity. In 1888 Quincke and Spengler, independent of each other, advocated the use of an extrapleural collapse. Brauer, an internist, suggested that a collapse of the lung be produced by multiple rib resection. This suggestion was executed by Friederich in 1907. A collapse of the thorax was produced by multiple rib resections according to the technic of Schede. The resection of the paravertebral portions of the rib, in

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†From the Department of Surgery, Tulane University Medical School, New Orleans, La.

order to bring about a collapse of the affected side, was first advocated and popularized by Sauerbruch.

The treatment of surgical tuberculosis consists primarily of immobilization of the part, with decrease in function, without interference with the nutrition of the involved area. The surgical treatment of pulmonary tuberculosis consists of an attempt to immobilize the affected lung, producing, as near as possible, physiological rest without, at the same time, interfering with the nutrition of the lung. The operative procedures which are employed at the present time may be divided into two main groups—the conservative, which are non-destructive, and the radical or destructive. It is important to distinguish between these two types of operative therapy, even though the aim in each is to produce a collapse of the involved lung. The indications and the prognosis are different for the two types. The conservative operative procedures consist of the production of an artificial pneumothorax and operations on the phrenic nerve.

ARTIFICIAL PNEUMOTHORAX.

A number of theories have been advanced explaining the beneficial effects obtained following the introduction of the gas into the pleural cavity. The deflation of the lung, producing physiological rest, is supposed by most observers to be responsible. Kuma has shown, experimentally, that even in the presence of a closed pneumothorax, there is movement of the collapsed lung; much less, though, than that which existed before the collapse. Cloetta believes, from his experiments, that the circulation in the collapsed lung is better than that in the expanded lung. Dock and Harrison, working with rabbits, found that immediately after the collapse of one lung there is little change in the volume flow of blood. Within three days, however, from only 9 per cent to 18 per cent of the total blood volume flows through the collapsed lung. Kuma has corroborated these experimental results. These observations, with the exception of Cloetta's, would lead one to believe that the blood supply and nutrition of the collapsed lung in cases of artificial pneumothorax are decreased. This appears paradoxical because of the improvement which ensues. The observers, however, have shown that there is a decrease in the pulmonary circulation, from which the nourishment of the lung is not derived. The pulmonary arteries contain blood which is to be oxygenated, imposing a strain on the lung. The function of the lung is increased. The blood supply from the bronchial arteries, however, is probably not materially decreased during the pulmonary collapse. Following an artificial pneumothorax, the function of the lung, and the physiological demand upon it for oxygenation of blood, is decreased, whereas the general circulation, from which the lungs receive their nutrition, is not altered. The beneficial effects produced by an artifical pneumothorax become evident. The function and mobility are decreased, whereas the nutrition is not impaired.

The indications for an artifical pneumothorax, as given by Muralt, are as follows:

1. Unilateral or chiefly unilateral pulmonary tuberculosis.

2. Severe pulmonary hemorrhage.

3. Spontaneous pneumothorax after the air has been completely absorbed.

4. Serious pleural exudate and tuberculous empyema.

Theoretically one is unable to treat a case of unilateral pulmonary tuberculosis, since it can be demonstrated pathologically that by the time a tuberculous process has progressed enough to produce symptoms the other lung is already involved. Practically, however, there are, clinically, cases of unilateral tuberculosis in which the tuberculous process is most marked on one side and gives no clinical evidence of contra-lateral involvement. Other cases showing evidence of advanced process on

one side, with evidence of a quiescent lesion on the contra-lateral side may be treated advantageously by artificial pneumothorax.

The contra-indications to pneumothorax therapy are:

1. Extensive process which is active in both lungs.

2. Extensive chronic non-tuberculous processes in both lungs, i.e., chronic bronchitis, bronchiectasis, emphysema, asthma, and pleurisy.

3. Severe intestinal tuberculosis.

4. Severe diabetes mellitus.

5. Severe cardio-renal disease.

Pneumothorax therapy is indicated in from five to ten per cent of all cases of pulmonary tuberculosis. The technic of the production of an artificial pneumothrax is, briefly as follows:

The apparatus employed usually is of the Saugman type or a modification of it. It consists of two bottles so arranged that both may be raised or lowered. The two bottles are connected by rubber tubing in such a way that water from one will flow into the other by siphonage. The water flowing from bottle No. 1 into No. 2 displaces the gas. Bottle No. 2 is connected by a rubber tube to a needle introduced into the pleural cavity, which is also connected to a manometer. It is essential to have sterile cotton interposed between bottle No. 2 and the pleural needle, so no foreign particles are introduced into the pleural cavity. The gases which are most frequently employed are nitrogen, oxygen, and air. Nitrogen is preferred by some because it is slowly absorbed. As air contains about 80 per cent of nitrogen, it, is, at the present time, considered the gas of choice because of its accessibility and cheapness. The needle, which should be of the Saugman type, is introduced in the intercostal space, usually in the posterior axillary line, at about the seventh or eighth inter-space, either with or without local anesthesia. Entrance into the pleural cavity is evidenced by the negative pressure manometric readings and the respiratory fluctuation. The negative pressure varies from minus 10 cms. of water during inspiration to minus 2 or 3 during expiration. As soon as the operator is positive that the cannula is in the pleural cavity, air should be slowly introduced. The patient's condition must be observed carefully, and any evidence of pain should cause a cessation of the procedure. After introducing about 100 c. c. of gas the pressure is again taken. If the pleural cavity is free from adhesions, there will be little reduction in the negative pressure. If, however, the needle is in a pocket, produced by adhesions, a markedly positive pressure may be encountered, in which case another site should be chosen. At the first filling never more than three or four hundred cubic centimeters of gas should be introduced. There is considerable difference of opinion concerning the amount of air which should be introduced. Morgan, in 1913, demonstrated that if a small amount of air were introduced into the plural cavity a "selective" collapse of the lung would result. The gas which is present tends to accumulate over the diseased areas of the lung, which are less expansile than the normal lung. Bendove has recently emphasized the importance of the "selective," or "expansile," type of pneumothorax. Yates has shown that before any operative procedure on the thorax is undertaken that it is essential to determine the cardiac reserve. Because of the lessening of the capillary bed of the pulmonary system, a strain is put on the heart, often producing signs of cardiac embarrassment. This is true especially in the cases of pneumothorax in which a marked positive pressure is produced in the pleural cavity. By the frequent introductions of relatively small amounts of air, always maintaining a certain amount of negative pressure within the pleural cavity, Morgan and Bendove believe that a collapse of the tuber-

culous process may be obtained without interfering with the function of the rest of the lung on the affected side and without producing any circulatory disturbance. During inspiration the manometric reading should never be less than minus 3 or 4 cms. of water.

Pneumothorax therapy is applicable only in those cases of pulmonary tuberculosis in which there is a free pleural space. The treatment by means of artificial pneumothorax offers relatively little in those cases in which numerous pleural adhesions bind the visceral to the parietal pleura and thus prevent the collapse of the lung, especially the involved portions. Jacobaeous advocates the division of the fine adhesions by means of an electric cautery introduced into the pleural cavity through a thoracoscope. The procedure, while useful in certain cases, has a very limited application.

COMPLICATIONS OF ARTIFICIAL PNEUMOTHORAX.

Pleural shock: The exact nature of this condition is not known. It is supposed by many observers to be the result of the introduction of air into a pulmonary vessel, causing an air embolus. While embolism accounts for a large number of so-called cases of pleural shocks, there undoubtedly exists such a condition as pleural shock *per se.* The exact mechanism is not understood, the symptoms probably being the result of an irritation of a bronchial nerve. Clamping of the bronchi during a pneumonectomy often produces symptoms similar to those of pleural shock.

Perforation of the lung: This complication occurs in from 3 to 6 per cent of all cases of pneumothorax. It most frequently results from the tearing of the lung at the point of attachment of an adhesion.

Pleurisy: Pleurisy develops in about 50 per cent of all cases treated with artificial pneumothorax. Saugman found this complication in 160 of 238 cases. The time of appearance, in his series of cases, was as follows: within the first three months, 34.4 per cent; the first six months, 48.3 per cent; the first twelve months, 55.4 per cent. Most cases of pleurisy encountered during the course of pneumothorax therapy are the result of tuberculous involvement of the pleura. Pleural effusions may be divided as follows:

1. Those in which the fluid is of a serous character and has little tendency to increase. In these cases the fluid is usually absorbed spontaneously in a period of weeks or months.

2. Fluids which in the beginning are distinctly serous, have a tendency to increase in amount, and remain for a long period of time. Later, the fluid becomes cloudy Large numbers of tubercle bacilli are found in the sediment, but no evidence of other microorganisms.

3. This group consists of those fluids which show evidence of secondary infection.

OPERATIVE PROCEDURES ATTACKING THE PHRENIC NERVE.

Phrenicotomy, phrenisectomy, phrenicoexairesis, phrenemphraxis: Resection of the phrenic nerve, as a therapeutic measure, in lower lobe tuberculosis and bronchiectasis was advocated by Stuertz in 1911. The operation was first carried out in animals and in human beings by Sauerbruch, who, in 1913, reported five cases treated in this manner. As simple division of the phrenic nerve often leads to failure, more radical procedures were soon devised. Felix, working in Sauerbruch's Clinic, showed, from his anatomical studies, that accessory filaments occasionally enter the phrenic well below the clavicle. In order to divide all of these filaments, in addition to the main trunk of the phrenic, he advocates evulsion, or exairesis of the nerve. The accessory phrenic nerve arises from the fifth cervical and lies 3 cms. lateral to the true phrenic. It enters the thorax in front of the subclavian vein and joins the main phrenic nerve either where the scalenus anticus muscle attaches to the

first rib or at a lower point. The phrenic nerve may receive fibers from the nerve to the subclavian muscle, from the spinal accessory, vagus, suprascapular nerve, or hypoglossal. Recently Yates has advocated a more conservative procedure especially to be employed in the early cases of tuberculosis, in which it is not desirable to obtain a permanent paralysis of the diaphragm on the affected side. This procedure, which consists of crushing the phrenic and its accessory branches, Yates designates as phrenemphraxis.

Operations on the phrenic nerve have as an object either a temporary or a permanent paralysis of the diaphragm on the affected side. Disturbance of the motor innervation of the diaphragm produces a flaccidity of that structure, causing a marked elevation of the diaphragmatic leaf. The elevation may be from 4 to 8 cms. on the right and from 2 to 4 cms. on the left. It increases with the length of time as the muscle atrophies, which Schlapfer has shown to occur in cases in which the phrenic nerve has been destroyed. Due to its loss of tone and power of contractility, movement of the diaphragm becomes paradoxical, in that during inspiration, instead of descending, as a normal diaphragm would, it rises, due to intra-abdominal pressure. During expiration the diaphragm descends. On fluoroscopic examination the two leaves of the diaphragm are seen to move in opposite directions. Unless paradoxical movement is obtained, following a phrenic nerve operation, except in the presence of dense adhesions fixing the diaphragm to a solid lower lobe, complete blocking of the motor nerve has not been produced.

The indications for either a temporary or a permanent blocking of the phrenic nerve are varied. Yates believes that a phrenemphraxis should be carried out in early cases of tuberculosis, producing a temporary paralysis of the diaphragm, which procedure puts the affected lung at partial physiological rest and increases the blood supply of the affected lung. Others advocate permanent phrenic interruption in basalar tuberculosis as a preliminary operation for thoracoplasty and in conjunction with pneumothorax. Sauerbruch is of the opinion that a phrenico-exairesis, or a temporary blocking of the phrenic, has no place in the treatment of pulmonary tuberculosis. It should be used only in conjunction with some of the other operative procedures. Felix reports sixty cases from Sauerbruch's Clinic treated by phrenicotomy alone, in which the operation was followed by a rapid clinical improvement, but in no instance was there any actual healing.

The operative technic, while very simple, is not without danger. Cases have been reported in which other nerves have been mistaken for the phrenic, the most common of which are the sympathetic and the vagus. In Sauerbruch's Clinic the sympathetic was divided once, with a consequent Horner's syndrome. Felix collected seven cases of injury to the vagus nerve; one of injury to the thoracic longus nerve, with partial paralysis of the serratus anticus muscle; one case of injury to the thoracic duct, and the esophagus. Davies gives as dangers of phrenico-exairesis (1) bleeding from the pericardio-phrenic artery, (2) dragging of the subclavian vein by the accessory phrenic loop, (3) rupture of adherent pleura, (4) evulsion of the vagus nerve. Sauerbruch has observed, among a total of 500 operations on the phrenic, two fatal hemorrhages following a simple phrenicotomy. He has had two cases of air embolism, which, however, did not end fatally.

Technic of operation: Under local anesthesia, using 0.5 per cent novocain for local infiltration, a transverse incision, about 5 cms. long is made about two finger-breadths above the clavicle with its midpoint over the posterior border of the sterno-cleido-mastoid (Fig. 1). The skin, superficial fascia, and platysma are incised. The posterior border of the sterno-cleido-

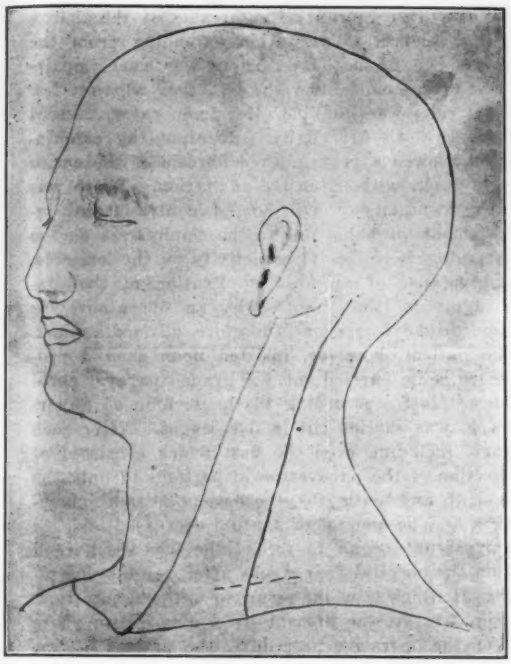
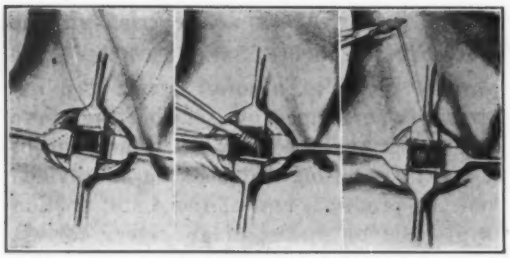


Fig. I. Diagram showing site of incision for phrenicotomy. Center of incision should be over posterior border of sternocleido-mastoid.

mastoid is retracted medially, and a space containing areolar and glandular tissue is entered. This space is bounded above and posteriorly by the posterior belly of the omohyoid muscle, below by the clavicle, and anteriorly by the sternocleido-mastoid muscle. By inserting the finger directly into the depth of the wound, the scalenus anticus muscle is encountered. The phrenic nerve lies on the anterior surface of this muscle and is often incorporated in its sheath. The space is often crossed by the transverse scapular artery, which usually can be retracted to one side, but may have to be ligated and divided. The phrenic nerve, which arises from the third cervical segment, crosses the scalenus anticus muscle on its anterior surface, passing from its lateral border medially. The internal jugular vein is retracted medially. (Fig. 2.) If the nerve is found to be large, in all probability the greater number of fibers supplying the diaphragm are carried in the main branch. If, on the other hand, it is found to be small, most of the motor fibers are carried in the accessory branches, which enter the phrenic nerve at a lower level. An exairesis is performed by isolating the nerve and injecting it with a small amount of novocain solution. The nerve is divided and the proximal end of the distal portion is grasped by means of an artery forcep. By twisting the forcep the nerve is rolled on the forcep, and, in this way, is evulsed. (Fig. 3.) Care must be taken not to attempt a too rapid removal of the nerve, as the nerve filaments may tear. An injury to the pleura or a thoracic vessel may also result. Yates, in performing a phrenemphraxis, operates on the fluoroscopic table, and after exposing the nerve, crushes it, and any of the accessory branches which are visible, with a pair of forceps. Before closing the wound a fluoroscopy is performed, in order to determine whether or not paradoxical movement of the diaphragm is present. If the paralysis is found not to be complete, Yates attempts to locate other accessory nerves and crush them.

THORACOPLASTY.

The indications for a plastic procedure on the thoracic cage are much stricter than those of the preceding procedures. A thoracoplasty is a destructive operation. It should be reserved for only those advanced cases in which a return of the function of the lung is not possible. Brauer sums up the indications very well in stating that the indication for a thoracoplasty depends entirely upon the results obtained following the production of an artificial pneumothorax. In those cases where a free pleural space is present a pneumothorax is the method of choice. In those cases, however, in which, due to adhesions between the visceral and parietal layers of pleura a collapse of the lung, by introducing gas into the pleural space, is impossible, an operative procedure, which decreases the size of the thoracic cage, is indicated. The productive, or fibrous type of pulmonary tuberculous responds better to thoraco-



A B C

Fig. III. After Lilienthal. A. Exposure of phrenic nerve crossing anterior surface of the scalenus anterior muscle. B. Nerve has been divided. The proximal end of the distal portion is grasped by artery forcep, around the tip of which the nerve is rolled. C. Nerve is being evulsed by winding the nerve on the forcep.

plasty than the exudative type. "Chronicity, unilateral involvement, and pleural adhesions, precluding the pneumothorax collapse of the diseased portion of the lung, constitute the fundamental indications" (Hedblom). Brunner, among 116 cases operated in Sauerbruch's Clinic, found that among 67 cases in which the disease was of the productive type, 10 per cent died, while among 49 chiefly of the exudative type, the mortality was 43 per cent. It is essential that the disease be unilateral or at least the process of the contralateral side be quiescent. In a few carefully selected cases it is permissible, however, in the presence of complete destruction of the markedly involved lung, with cavitation, and in which there is no function, to attempt a graded thoracoplasty, even though activity be present in the contralateral lung. These cases are, however, the exception. The following case is an example:

M. M., female, 26 years; admitted to the hospital May, 1926. For eight years the patient had had an extensive pulmonary tuberculosis involving the right side. During this entire period of time she had been under constant treatment in a sanatorium. At first there was apparent improvement in the patient's condition, but for four years previous to admission she had gradually gotten worse. She came to the hospital with the expressed purpose of having a thoracoplasty done. She felt that, in spite of rigid conservative therapy, during which time numerous unsuccessful attempts had been made to produce an artificial pneumothorax, her condition had gradually gotten worse, and that an operative procedure was all that was left. Examination revealed dullness over the entire right side of the thorax with evidence of cavitation extending from the apex down to the base. There was some impairment of resonance over the left apex where a few moist rales were audible. Her temperature ranged from 101° to 104° daily. Roentgen-ray examination showed a very marked fibrosis of the entire right lung, with extensive cavitation. There was little roentgen-ray evidence of contra-lateral involvement, probably due to the emphysema on the left side. Because of the activity on the left side, and because of an absolute fixation of the diaphragm on the right side, an operation was deemed inadvisable and, therefore, advised against. The patient, however, insisted upon such a procedure being carried out. A graded paravertebral thoracoplasty, according to the technic of Sauerbruch, was carried out in five stages. After each stage, including even the first which consisted of resection of the paravertebral portions of only the eleventh and tenth ribs, the patient's condition improved. The amount of sputum decreased and her temperature began to fall. She was discharged from the hospital four weeks after her last operation, at which time she returned to the sanatorium. (Fig. 4.) At the present time, almost two years after the operative procedure, the patient is free from symptoms; is, however, a resident of the sanatorium, where she serves in the capacity of assistant superintendent, executing rather heavy duties. The explanation of the benefits obtained in this case is that the markedly involved lung was not functioning. The patient was, however, absorbing considerable toxin from this lung, probably more from the secondary infection than from the tuberculous process. (Fig. 5.) An operative procedure in collapsing the lung could not throw an added burden on the sound lung because of the non-function of the pathological side. The operation, which was carried out in numerous stages, under local anesthesia, so that

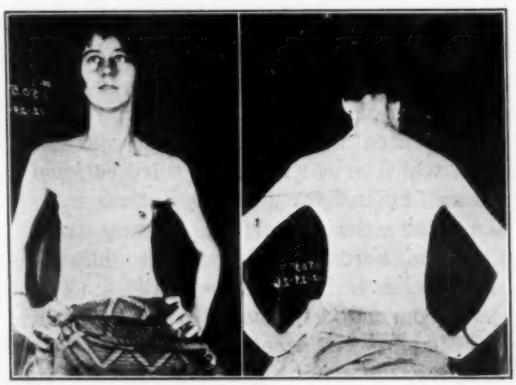


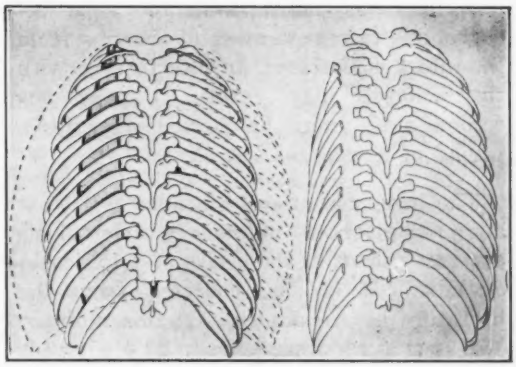
Fig. IV. Patient M. M., on whom a left sided thoracoplasty, acording to Sauerbruch, has been done. There is little evidence of deformity.

Fig. V. Roentgenographic plate of patient M. M.

A. Plate of chest before introduction of iodized oil. B. Plate of chest after introduction of iodized oil, showing that in spite of extrapleural collapse, there remain large cavities.

relatively little strain was put on the cardio-respiratory system, brought about a collapse of the markedly dilated portions of the pathological lung, decreasing the absorption of toxin. The patient's resistance was then able to overcome the tuberculous process in the comparatively sound side.

Thoracoplasty should not be attempted in children nor in old individuals. The best results are obtained in patients from the ages of 15 to 45 years. The operative procedure of choice is that of Sauerbruch, which consists of a paravertebral extrapleural thoracoplasty. (Fig. 6.) The technic is as follows: With the patient in a semi-sitting position lying on the sound side, both arms are drawn forward. The operation is performed under paravertebral nerve block, and in hypersensitive individuals gas oxygen anesthesia should be added. The curved incision of Sauerbruch is employed, which begins about midway betwen the shoulder and the neck, extends medially to a point about three fingerbreadths lateral to the spinous processes, then parallels the vertebral column, to again curve laterally in the tenth intercostal space. The operation is best carried out in two stages, beginning with the lower ribs. The paravertebral portion of the ribs, beginning with the eleventh are resected subperiosteally. From 6 to 10 cms. of the ninth, tenth and eleventh ribs are removed. From 12 to 14 cms. of the sixth, seventh and eighth, and from 5 to 8 cms. of the second, third, fourth and fifth, and about 1 cm. of the first ribs are resected. The most difficult part of the operative procedure is the resection of the first rib because of its deep position and its proximity to the subclavian vessels. Either a Sauerbruch first rib shears or a Lilienthal guillotine should be employed. (Fig. 3.) If at any time during the operation the patient's condition does not seem satisfactory, the operation should immediately be interrupted and completed at some second sitting. Sauerbruch advises performing a thoracoplasty in one stage. Most operators perform a two-stage operation, but the number of stages employed depends entirely upon the condition of the patient. Because each rib is suspended from its fellow above, it is essential to resect the paravertebral portions of all the ribs, including the first, in order that a maximum collapse may be obtained. Following the removal of the paravertebral portions of the ribs, the thoracic cage falls and approximates the midline. (Fig. 6.) In order to obviate the pain which may follow a thoracoplasty, it is advisable to isolate the intercostal nerves and inject each with a small amount of one-half of 1 per cent quinine and urea hydrochloride solution. Because of its irritating effect, it is essen-



A B

Fig VI. After Lilienthal. Showing collapse accomplished by Sauerbruch paravertebral thoracoplasty. A. Shaded area denotes portions of ribs resected. B. Collapse obtained following resection or ribs.

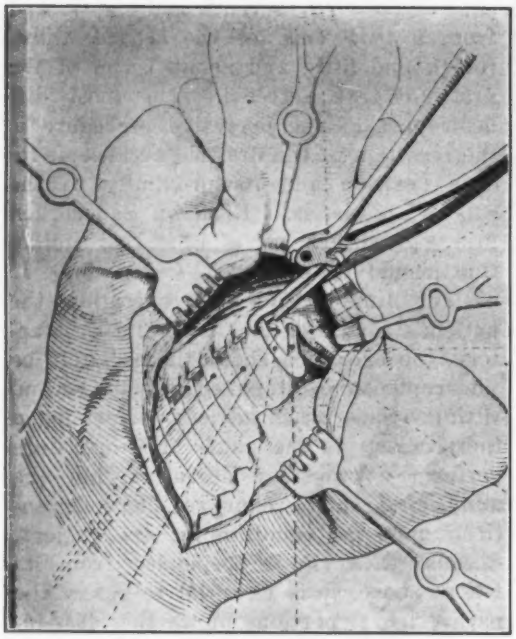


Fig. VII. After Sauerbruch. Diagram showing resection of 1st rib after resection of the lower ribs.

tial to wash out the excess of the anesthetic before closing the wound. In closing the wound the muscles are sutured in layers, after instituting drainage which is left in place from twenty-four to forty-eight hours.

The length of time intervening between the various stages depends entirely upon the condition of the patient. It is desirable, however, not to wait too long, because, due to regeneration of the ribs from the intact periosteum, an interference with the collapse may result. Usually the second stage may be carried out after a period of a week or ten days.

The beneficial effects obtained following a thoracoplasty in pulmonary tuberculosis are best shown in the series of 1,159 cases of advanced lesions, collected from the literature by Alexander. Of this number, 36.8 per cent were cured, 24.4 per cent were improved, giving 61.2 per cent with favorable results. Five per cent were unimproved or became worse. The immediate mortality was 1.5 per cent, with an additional mortality after operation of 12 per cent.

Occasionally following an extra-pleural thoracoplasty, even though an apparent satisfactory collapse is obtained, the patient still continues to have symptoms, as evidenced by the continuation of the sputum and fever. Archibald has emphasized the importance of introducing iodized oil into these individuals, in order to determine the presence of existing cavitation following surgical collapse. Not infrequently the symptoms are not the result of the persistence of a tuberculous process but of a superimposed secondary infection. In these cases, distinct benefit is obtained by the repeated introduction of iodized oil into the affected cavities (Ochsner).

SUMMARY.

Surgery is indicated in certain selected cases of pulmonary tuberculosis. The surgical procedures employed may be divided into conservative and radical. The conservative procedures are largely non-destructive and consist of the production of an artificial pneumothorax and operations on the phrenic nerve. Surgical treatment is indicated in cases with unilateral tuberculous lesions, or in cases in which the infection in the contra-lateral lung is quiescent. Of the various types of pneumothorax, the selective or expansive type of pneumothorax, is preferred. Phrenemphraxis is indicated as a conservative measure in early tuberculosis, whereas phrenico-exairesis is the operation of choice as a test procedure or in conjunction with artificial pneumothorax in the more advanced forms. It is of no value in cases in which there is a fixation of the diaphragm. Of the plastic operations the paravertebral extrapleural thoracoplasty of Sauerbruch is the method of choice. In the chronic fibroid type of phthisis, with marked unilateral involvement, this operation, performed in stages, is of distinct benefit. In a large series of collected cases treated by thoracoplasty, an improvement was obtained in over 60 per cent.

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DISCUSSION.

Dr. Shirley Lyons (New Orleans): This subject is of tremendous importance to every medical man, and I wish to thank Dr. Ochsner for his very excellent treatise. The subject is so extentive that only the important phases can be brought out in the time allowed. I wish only to emphasize a few points concerning artificial pneumothorax.

Since this important surgical adjunct in the treatment of pneumothorax tuberculosis was brought before our profession in 1895, by Dr. John B. Murphy, it has been used in a large number of cases with very encouraging results. In the earlier days, it was reserved for the cases which were considered hopeless and only after every other known method had failed. As was to be expected of any treatment when used only in hopeless cases, the results were not brilliant, but they were sufficiently encouraging to justify some workers to try it in earlier stages of the disease. Today, many of those who have given the subject study have concluded that if there is any doubt as to the patient's progress, he should be given the benefit of immediate pneumothorax.

There can be no fixed rules guiding the indications for artificial pneumothorax, but there are several conditions which make treatment imperative: (1) Repeated and severe hemorrhage in any stage of the disease. (2) The low grade tubercu-

lous patient with persistent cavity, sputum and bacilli after prolonged treatment under suitable conditions. (3) In chronic cases with periodic relapses with disease confined to one side. (4) To replace serious or prevalent effusion in a tuberculous subject.

In the production of artificial pneumothorax we have a simple, comparatively harmless therapy, which has heretofore been used in the more hopeless cases, which offers a useful means of controlling the disease in its early stages. In properly selected cases, relief is prompt and effective. That is one nice thing about the treatment, you do not have to wonder if you are getting results; as a rule, in about the first three or four weeks, the results will be such that you can tell and the patient and family can tell that you are getting the results, by the marked reduction or total absence of sputum and the pulse rate approaching or returning to normal. The dangers of pneumothorax are so slight, in the hands of an experienced operator, that they may be considered negligible. I say this, in spite of the fact that, in reviewing the literature, occasionally you will find a series of two or three or four cases in which the results are fatal, I still believe that the complications are more or less negligible. The indications and contra-indications are based to a large extent on the operator's experience and skill.

There are two other points: I do not think artificial pneumothorax ought to be introduced by the operator without consultation with another physician. I deem it of sufficient importance to warrant consultation.

One other point: Your patient and family will want to know how long this is going to have to continue. In the most favorable cases, you can promise eighteen months to three years' treatment, some longer than that, but I have never seen a case fail to continue through the treatment, when it is left to his choice.

The more complicated surgical procedures are to be considered only after a thorough trial with artificial pneumothorax.

Dr. Ochsner has covered that subject so very thoroughly that I do not think there is much left to say on that score, except that I would like to plead with you all, if you should have a case in which artificial pneumothorax has been unsuccessful and any type of surgery is advocated, don't take the attitude that your patient is going to be deformed or maimed or anything like that. The mortality is only 10 to 12 per cent, and that is not high, considering some of our other surgical procedure, and I would like to plead co-operation with the surgical man with the more or less hopeless cases.

Dr. W. J. Durel (New Orleans): Of course, I am a medical man and not a surgeon, but this is one subject wherein if the medical man does not co-operate with the surgical man, do not start any surgical procedure.

At the Charity Hospital we have had there hundreds of cases, cases of tuberculosis that warrant artificial pneumothorax—which, by the way, is a part for the medical man, not for the surgeon; pneumothorax should not be practiced by the surgeon, it belongs to the medical man. In other words, in practicing artificial pneumothorax, we have a bed plan by which, when we approach the bedside of especially an advanced case where before we simply had to fold our hands and wait and expect the final act of life, today, we can go a little further and offer this patient relief and offer him many, many years of very active life.

Now, I have been using the artificial pneumothorax for fourteen years in Charity Hospital, cases that permit us to use artificial pneumothorax. It is you gentlemen who have to lead this procedure and help us in gaining headway.

I will give you one example. Dr. Jones will remember that, during the month of December and January, I had booked twenty-eight cases for artificial pneumothorax. They asked me to wait until after New Year. I waited until the holidays were over, then we decided to have quite a clinic on artificial pneumothorax, and when the day came, there was one patient left in the hospital, the others had all deserted because the physician had told them it meant death.

I am from the South, my grandparents are from the South, but this is a fact, we of the South are backward. Gentlemen, let us be leaders. I make a plea for it. Here is an institution, the Charity Hospital, with two hundred and fifty beds, the gift of a noble woman who is trying to help humanity, and here we poor little selves are trying to help the suffering humanity, because the uneducated profession may be unwilling, worse—against us, and induce these poor deprived patients not to have it. Many patients do die, it is not pleasant for the doctor to puncture the side of an individual every ten or twelve days for three years, at least, and it is not pleasant for the patient to be punctured.

I will not discuss that any more, there is enough in the literature for you to know all about it; you cannot say there is nothing published on it; the literature is full of it, so go to it, do it yourself. When you send your patients to Charity Hospital, tell them "They are not going to murder you, there, if they want to stick a needle in your side." What is the outcome if it is not done? Death, gentlemen.

Now, as far as phrenisectomy, I have succeeded in having one of our surgeons help us out, and Dr. Ochsner was kind enough in trying this recently, with fairly good results. As far as phrenisectomy is concerned, I would advise phrenisectomy preceding phrenicotomy.

I am surprised with the cases we have had. One case was a severe case and when the diaphragm was not free, yet from this case, after phrenisectomy, there was a rise of the diaphragm and a flacidity and positive collapse, equivalent to about 500 c.c. and this patient is doing well.

Another case was a case for phrenicotomy, but the opposite lung, if not the lateral lung was a little moist and I advised Dr. Ochsner. That is why I say, there must be a close co-operation between the physician and the surgeon, because the surgical therapeutic work is not like amputating a leg. Before you do surgery of the lung, you must know the pathology of tuberculosis, and if you do not know the pathology of tuberculosis, do not do surgery. Therefore, you go in unison, hand in hand, with your surgeon.

I will cite another case, a patient who came from the West and he wanted to be thorocoplasted immediately. I told him to ask his physician, one case where it was the rule; they telegraphed him. He had a sweetheart out West, a trained nurse, who wanted him to be thorocoplasted, but this man had one lung quite involved but the opposite lung was active. Now, what was the outcome? A beautiful surgical result but a dead patient after a few days, because after you do the thorocoplasty and collapse the lung, the other lung certainly will never be able to keep up the vital capacity of that individual. So, I advised a phrenisectomy to be done, and it was done. Just that phrenisectomy, however, came mighty near flaring up in the other lung.

Now, of course, Dr. Ochsner has been sick and not able to take the cases left for him, but I am sure Dr. Danna is coming to our rescue, and when he promises something I know I can depend on him.

This case was phrenisectomized, and after three weeks, they wanted him down in the surgical department for thorocoplasty; after the plain phrenisectomy, he had twice the volume in the lung he had previously. Meaning what? Meaning a temporary involvement, extension of volume in the phrenisectomized lung. In another month or so, this patient will be able to stand theroplasty and be a valuable asset to himself and his family again.

So I say, we need co-operation between the surgeon and the physician; we must walk hand in hand; if you part, gentlemen, your results are going to be disastrous.

Now, another thing, let us not wait, however, for these thoracic operations to the last moment. However, this is the rule that most of the etiologists have adopted, as long as we feel that a patient can be cured or benefitted or put back in a healthy working order, without any of the surgical aid. It is a matter of three years, and I admit that the results sometimes are startling, but they are not so wonderful as we sometimes think.

Dr. Danna (New Orleans): I probably would not have said anything if Dr. Durel had not used my name in vain, but this is a subject which I would like to have the membership, individually, take home with them and ponder over. I was just sitting here thinking that there are very few of us who have had any experience with thoracoplasty. We are very anxious to do these operations, but we feel our responsibility in doing this kind of work, because it is a very serious thing and should be done only in selected cases and only with active consultation with the medical man.

Now, unfortunately, the tuberculosis patient is the patient who, on an average, speaking of the average case, treated by the average doctor, gets very little active attention and active supervision and active watching by the doctor, as to what the processes in his lung are, from time to time.

The average man, treating a "t. b" case, will put him on the usual treatment and maybe not see him for months at a time. I would like to make a plea for more active supervision of these cases, and for more study of the individual case, so that these cases requiring thoracoplasty can be selected and operated on by men having the necessary experience to be able to do it.

Dr. Durel has mentioned the fact that I was interested. I have been interested, I have seen some cases with him in the tuberculosis wards, we have decided to do something surgical for them, and, the next morning, the patients were not there, they had gone; they had gone, because of the feeling of the patients and their doctors and perhaps some of the nurses and "hangers-on," that maybe we were trying to experiment with them and do surgery on a case that required no surgery.

So, I would like to have you take home with you the idea that surgery can save a number of these patients. As Dr. Durel tells you, these are usually the patients that will die, if surgery is not done on them.

Dr. I. M. Gage (New Orleans): I would like to thank the Chairman and the Surgical Section

for the extension of time they gave me to read Dr. Ochsner's paper, and also appreciate the discussion of the paper.

I would like to corroborate the statements of Drs. Durel and Danna about the co-operation of the internists and surgeons. This applies not only to surgical tuberculosis but to all surgical cases. The surgical field in tuberculosis is a very large one but limited in its scope. In the treatment of pulmonary tuberculosis in selected cases the extrapleural thoracoplasty of Sauerbrush is probably the method of choice, as it accomplishes all that the more radical procedures offer, with practically no deformity of the chest.

In some of these cases following thoracoplasty, there is a continuation of symptoms, which Dr. Ochsner has shown to be the result of bronchiectasis, the cavities not being completely collapsed by the surgical procedure. Dr. Ochsner has demonstrated that in this type of case the therapeutic results obtained by the introduction of iodized oil is worthy of note. Therefore, in cases that continue to expectorate large amounts of sputum following the Sauerbruch extrapleural thoracoplasty, it behooves us to make a study of the bronchial tree by the introduction of iodized oil by the "passive" technic.

I thank you.

THE ACUTE ABDOMEN*.

J. M. ACKER, JR., M. D.,

ABERDEEN, MISS.

Acute abdomens are generally first seen by the family physician and it is upon his advice that the case rests. In dealing with a paper of this kind it is hardly possible to consider the subject from the standpoint of a clinical entity. In my opinion, it should rather be dealt with by determining or defining, what is an acute abdomen, what are its causative factors, and what is its treatment?

I shall not try to offer anything new or startling, but shall content myself with trying to create interest and a desire for more prompt recognition of this condition among the men of our profession. Being mostly a general practitioner with a rather limited surgical experience, I hesitate at attempting to discuss so large a subject and one of such great importance to us, and I might add of even more vital importance to our clientele. If my ideas are wrong I shall welcome correction. It was with the hopes of eliciting a liberal discussion on an old-timeworn, but paramount, subject, that I reluctantly accepted the invitation of the surgical section's Chairman to present a paper on the acute abdomen.

What is an acute abdomen? It is an abdomen in which something has happened. Something gone wrong and the pathology within is dependent on a lesion or lesions that need immediate attention. Some great medical and surgical authority has termed it "an urgent abdominal condition." An abdominal calamity, if you please, has befallen the patient and something must be done at once. The correct mode of procedure should be clear in every doctor's mind. No time must be lost in starting our defense. I am of the belief that in spite of the suddenness of the onset of an acute abdomen, that in most instances, they are sudden terminations of chronic abdominal lesions. Of course, there may be exceptions. Preventive surgical remedies for abdominal calamities have not kept pace with preventive medicine. This is well illustrated by the many deaths from the perforated appendix preceding the fatal peritonitis. Urgent abdominal conditions have to do almost entirely with perforated lesions, either visual or occult. These perforated lesions are the commoner abdominal calamities that deserve our deepest consideration. They are the ones that in the majority of instances are causing the acute abdomens. I believe all patients with acute appendices should be considered as having acute abdomens for certainly in the majority of cases unless the appendix is removed the patient will sooner or later develop an acute or urgent condition. Therefore, with the mere mention of the acute appendix and also cholecystitis as causes of the acute abdomen, with of course an earnest appeal for the early recognition of both, this paper will be directed more especially towards a discussion of the pathologically perforated lesions as the cause of the acute abdomen.

*Read before the Mississippi State Medical Association, Meridian, Miss., May 8-10, 1928.

Why after an examination of what we think is an acute abdomen, is it imperative that the abdomen be opened? The answer to this question is simply the recitation or enumeration of the lesions or conditions that cause an acute abdomen, in other words, the causative factors of the trouble. Classified according to the frequency of the lesions producing an acute abdomen, appendicitis comes first. Any classification of the most frequent causes must start with this pathology. That was mentioned in the preceding paragraph. Then, in the opinion of the essayist, come the following conditions: (2) cholecystitis, (3) perforation of the appendix with accompanying peritonitis, (4) perforations of duodenal or gastric ulcer, (5) rupture or leakage of pus tubes or ovarian cyst, (6) acute intestinal obstruction, (7) rupture of ectopic pregnancy, (8) perforation of gall-bladder, and (9) acute pancreatic lesions. We are all agreed that conditions such as these need attention. There is no medical treatment. What must be done is essentially and entirely surgical and no time should be lost in seeing that these measures are instituted. Acute perforation of the appendix, unassociated with a cathartic, in my opinion rarely occurs. Of course, there are exceptions to this statement. As mentioned before my observation has been that acute perforation of any viscus is only a more or less rapid termination of a chronic lesion. The rapid pouring out of intestinal or appendiceal irritating and infecting fluids will cause an early and unyielding rigidity of a diffuse area of the abdominal walls. Such areas of rigidity, if the patient is not completely overcome later, is more locally confined to the right side. Such localization in the urgent or acute abdomen should never be waited for. Simply pain with rigidity of the abdominal walls is always a command for the closest investigation and in the majority of cases is ground for an immediate laparatomy. Little attention may be paid to the temperature which may be even subnormal and often is when perforation is first seen. The temperature, with nausea and vomiting, however, will play an important part in the differentiating between this condition and the pneumonias, kidney colics or menstrual disturbances. Acute pneumonia and pyelitis have many times been mistaken for the acute abdomen. In obtaining a history of an acute abdomen, one should never fail to bring out the history of any cathartic which a great many times has been given. We might generally say that with the pain and rigidity as mentioned above, added to the history of a previous cathartic, it should always be imperative to open the abdomen. I am of the opinion that the advances made in laboratory diagnostic measures avail one little in the handling of an acute abdomen. To submit a patient with acute abdominal symptoms to a gastro-intestinal roentgenogram is unthinkable. A good many inflamed appendices have burst while the doctor was waiting for the leukocytes to rise and consequently announce to his patient that surgery was indicated. A urinary examination can and should of course always be made. The old diagnostic triad, pulse, temperature and respiration, together with the abdominal pain and muscular rigidity are to be relied upon more than all diagnostic refinements in your acute abdominal cases.

It should be remembered that practically in all acute perforations or rupture of abdominal organ, symptoms of bowel obstruction are present. The peritoneal irritation incident to any perforation is manifested as a paresis of the intestinal canal.

Acute perforation of the duodenum and stomach are dire abdominal calamities and produce a most urgent acute abdomen. In this condition there is intense pain, the patient seems consumed with fright. He or she is held in immovable position, terror is on the face and there is an appeal for gentleness in examination. The picture is more intense than that in the perforated appendix. The pain, rigidity and tenderness are found to the superlative degree. The breathing is superficial and often

there is cyanosis. The rigidity is wide spread, universal and board like. There is no region of the abdominal wall that will yield to pressure. Again, it is evident that the only relief for a condition like this is surgery.

Peritonitis following the leakage of a pus tube or an acute rupture of an old pyosalpinx or ovarian abscess is frequently the cause of an acute abdomen. A great deal of shock is attached to the rupture of a large tubo-ovarian abscess, so much so that the patient for the time being is not so much ill from the peritonitis as she is from the shock incident to the intra-abdominal catastrophe. Here, I think it a good time to mention the problem that always faces us in the examination of these acute abdomens, of determining where in the abdomen the lesion is located. I believe that the operator should know as far as it is possible, the definite location of the intra-abdominal lesion, and should know where to make a legitimate incision in order to combat such lesion. In reckoning with an acute abdomen the ovarian cyst with a twisted pedicle must be kept in mind.

Any patient suddenly seized with acute abdominal symptoms in the presence of an abdominal scar, evidence of a previous operation, should arouse suspicion. Of course we have serious trouble of this nature without any history of a previous operation or scar, where the patient shows only sudden pain and constipation. With or without a scar, the patient should receive our closest watchfulness for intestinal obstruction should be suspected. Delayed operation in this condition means death no matter what is the cause. If you wait for fecal vomiting, distended abdomen and high blood count, operation may be too late. I do not consider blood count as of very much value. The chief symptoms are sudden severe pain with localized tenderness, nausea and vomiting.

A word about ruptured ectopic pregnancy. The most interesting thing about this condition is the difference in the management of it. The chief trouble or immediate danger is the hemorrhage. Of course this hemorrhage must be controlled. It may be too late to wait for a reaction from the shock. This condition always shows an extreme picture of collapse. The patient is blanched, often unconscious and quite oblivious to her surroundings. Generally, however, we can secure some clinical history from some one that will aid in a correct prompt diagnosis. We often see the most extreme picture of shock, the patient being both pulseless and unconscious. However, when the correct surgery is applied, better results are obtained, than in most any other similar alarming condition.

Acute perforation of the gall-bladder is not apt to take place and more or less substitutes the symptoms of empyema of the gall-bladder or abscess in the peri-gall-bladder region. We are more often dealing with a local abscess incident to the ruptured gall-bladder than with a frank perforation of the organs. In these perforations, pulse and temperature are not confirming evidences. Pain in the gall-bladder region with well-marked rigidity of the upper right rectus with previous clinical gall-bladder history is about all we have for diagnosing these conditions.

In the acute pancreatic lesions we find sudden intolerable pain of paroxysmal character, localized in the epigastrium but sometimes referred to the left shoulder. This is followed by symptoms of shock in varying degree. Vomiting is a prominent symptom and is generally persistent and uncontrollable, but never regurgitant or fecal. Respiration is hurried, shallow and thoracic. There is a leaden color to the face with cyanosis. Abdominal tenderness, rigidity and distension are not features of the disease in the early hours. With extreme symptoms, the diagnosis has been made, but more often has the abdomen been opened suspecting perforated ulcer or gall-bladder. This condition may be recognized from the perforated lesions, by

causing less tenderness, spasticity and distension, by more copious and persistent vomiting and by paroxysmal exacerbations of pain remaining most intense. There may be some board like abdominal rigidity but it is always confined to the epigastrium, while the agonizing pain is also located in the upper abdomen.

How to proceed, what to do and what not to do, in these acute abdominal cases, are questions the answers to which are pretty generally agreed upon. The mortality in the acute abdomen increases rapidly after the first six hours. Each additional six hours adds an increasing failure for surgery. It was the late Dr. John P. Murphy who said, "Somebody has been to blame for every death from acute peritonitis." Early radical treatment in these conditions is conservative treatment, and no treatment other than surgical is radical. There is only one thing more important, and that is prevention. The family physician is the preventive agent, the surgeon or surgery the specific treatment. The treatment of the acute abdomen starts with the early recognition. Therapeutically nothing whatever can be done. Early surgery is our salvation.

I shall not attempt to cover the operative procedure in these cases, but will content myself with insisting upon immediate opening of the abdomen, removal of the appendix, appendiceal stump, closure of the perforation or correction of any other pathology found. Adequate drainage by means of drains and the patient's position in bed. Volumes could and have been written along these lines. I can add nothing. However, I cannot close my paper without stressing both pre-operative and post-operative measures as being of the greatest importance. I know of nothing of more importance. These measures look towards conserving the patient's strength and energy by preventing and combating shock. The profession has for years been searching for some preparation that could be introduced directly into the circulation without harm to the patient and that would act as a food, prevent dehydration, combat toxemia and aid in elimination. The goal was reached, I think, by the use of a 5 per cent solution of glucose given intravenously and continually at the rate of about 100 c.c. per hour, just as long, and as often, as necessary. In my humble opinion, this measure used both pre- and post-operatively has done more for these acute abdomens than anything, with, of course, the exception of the early recognition and immediate operation. Patients that are septic, starving for water, so nauseated they can not retain fluids by mouth, gradually come back under this intravenous medication. This measure ranks next in importance to ridding the patient of the causative factors by operation.

Perhaps this discussion of a condition that has been gone over so much and to such an extent is tiresome to most of you. I apologize for taking your time. However, if my efforts have been successful in adding but a small stimulus to prevention, and then early diagnosis, with prompt action in these cases where delay means such tragic fatality, I shall not consider that my paper has been in vain.

DISCUSSION.

Dr. J. A. Crisler (Memphis): Not much can be said in five minutes on so valuable a paper. I think the time has come when we might stop throwing bouquets, but surely this is the best paper I ever heard on the acute abdomen. Your chairman has been kind enough to call on me on several occasions to discuss papers. I used to discuss them all twenty-five years ago when I was a member of this Association, but now these young fellows have gotten smarter than we old fellows. We know a lot by experience that they probably don't know, but they know more of the recent things that are as important as matters of experience, so we might say too much and get lost, get an anchor around our neck and get out into the sea and drop quietly over.

I was impressed by the importance of early diagnosis. The doctor has so completely covered that feature of the case until nothing further could be said, except that in some cases early diagnosis is probably impossible and the abdo-

men would have to be opened regardless of the diagnosis just for general purposes. Some of these later symptoms that he mentions are not symptoms of disease, but symptoms of death—signs of death—so that early opening of the abdomen in acute abdomen is never out of place.

I call your attention to two cases that I saw, difficult of diagnosis, in our clinic. One was referred to me, to make it brief, with an acute fulminating appendicitis. Let us pass over by saying that the blood count and everything else indicated that—the pain was localized over the appendix—the man was tremendously sick with acute symptoms that occurred 24 hours before we saw the patient. We went in, confirming the diagnosis in our own mind, as acute appendicitis. We ran into an enormous clot of blood, and I almost looked up to see if I was operating on a woman, instead of a man, with an acute ruptured uterus. The next thing we encountered was pus, which saved us from the necessity of going on into the duodenum and stomach. We were rather anticipating an ulcer, but passing my hand up I ran into an enormous liver abscess, and we drained that and the man got well.

Another case the patient was brought in with this symptom; he had gotten up at 4 o'clock in the morning and gone to his doctor some four miles distant and had had a hypodermic for pain in his left side, rigidity down his left ureter into the testicle. The doctor said he thought he had a renal calculus. In six or eight hours he developed a similar pain on the opposite side, and another physician was called, and he diagnosed it as acute appendicitis. The patient was brought to us with that history. We were utterly unable to locate any place in which an incision could be intelligently made. One physician rather urged the idea that it was an acute appendicitis, because of the blood indication and inflammation, so we delayed it one day, two days, on up to six days, and finally we got back to his old diagnosis. Our genito-urinary man made all sorts of investigations of the ureters and kidneys; he had no trouble there, so we finally went in, because he was a little tender on the left side, and we ran into three separate and large abscesses, probably due to rupture in the descending colon and sigmoid. Sometimes accurate diagnosis is utterly impossible, no matter what you know about your blood and your history and what your experience has taught you. Sometimes the diagnosis is thoroughly impossible and we have to think of that, but the safe thing is whenever you have anything like sufficient symptoms to warant you to go in for them, go in as early as possible.

Dr. V. B. Philpot (Houston): I just want to bring out one point in the diagnosis. Of course, as Dr. Crisler said, we very often can not make an accurate diagnosis, but there is one condition in which we strive to eliminate, and that is intestinal colic which is the one condition where any kind of purgative is indicated, and I doubt whether extra lavage wouldn't do just as well—an enema. Pressure on the abdomen in intestinal colic generally relieves the pain, whereas in most of the acute conditions it aggravates the pain. All of us have to deal with patients who have had purgation given for this purpose, and possibly they have an acute condition. If doctors would just think of that they might refrain from purgatives and therefore eliminate a good many deaths, because I believe purgatives do kill more people in acute abdominal conditions than anything else. I believe I would rather risk my chances without my operation in acute appendicitis any day, than to have purgation and have an operation.

Dr. W. H. Frizell (Brookhaven): Dr. Acker referred to the acute abdomen in making an early diagnosis. Sometimes we can not make an early diagnosis. Recently I had a case, a negro woman, 38 years old, who had repeated attacks of appendicitis. She had a chronic case with acute exacerbation. Later on she had had a very acute attack. She got up and I told her that sooner or later she would have to come to the table, and why not now? She objected to that. She was on the plantation, and on Sunday she had an attack. She knew it meant the knife, so she was a little bit loathe in saying anything about it, and finally I was called in any way on the third day. She had taken violent purgatives in an effort to remove her trouble. I had her brought in, urinalysis made, pulse rate and everything else that you can find; her bowels were moving along; she had no nausea; she suffered very little pain, temperature from 99° to 100°, so we put her in for operation and in three more days went into her abdomen with a diagnosis of chronic appendicitis plus I didn't know what. When we got in there, she had a movable tumor from McBurney's point going up in an inverted J and from within the abdomen you could move it about any way you wanted to. I went in there and I found an agglutinated mass of intussusception between ten and twelve inches long. In my system of raising this up, I opened her bowels about four inches and we looked down in there, and there was a gangrenous bag, and another mass half as large. I knew that she was headed for the undertaker. I closed the appendix, pulled the omentum down and fastened it down and closed the wound with two soft drainage tubes in it. On the second

day I removed the drainage tubes. That negro today is as well as any of you are, with a perfectly soft abdomen, and was in my office the other day. She has been out of the hospital some time and she came in and said: "Doctor what can I eat?" It just goes to show how in the abdomen you can not find out anything about them. As Dr. Crisler wisely said, go in and see.

Dr. G. C. Hightower (Hattiesburg): Dr. Acker has covered the disease. I want to speak just a word about how to manage the patient—how to avoid any pitfalls that I used to fall into, but I seldom do now. All of us agree that the diagnosis in every case can not be made. All of us agree on that. We are sure of that. The question then arises how we are going to manage the patient. If you have made a very accurate diagnosis, blood tests, etc., and you come to the conclusion in your own mind that the most likely thing there is an acute appendicitis, well, one of the pitfalls we fall in is this: you say "you have got an acute appendicitis, you have to be operated on at once, if you don't you will die in six days." You forget that the patient is likely to refuse to be operated on, and sometimes they do, and on the sixth day they are well and up again. Then on the other hand, if you tell that patient that you do not know positively but think he has acute appendicitis, and in this case you rush that patient into the operating room and open him up and do not find any appendicitis, and he says, "Doctor, what did you find?"—you will have a hard time explaining, so how to avoid these pitfalls is my subject.

When you have made every differentiation and you can not make a positive diagnosis, tell that patient the truth; say, "I do not know what is the matter with you, but my opinion is so and so, and I advise you to have an exploratory operation. I won't take the responsibility if you wait, but I will be glad to go into the abdomen and see what your trouble is and remove it whatever it is," and in that way you will avoid some very bad pitfalls.

Dr. R. B. Caldwell (Baldwyn): We knew when Dr. Acker got up to read the paper that we had a most valuable paper coming, but he stresses a point or two that I think very important. There are so many of these acute abdomens that it is a great factor in our profession. You have to get busy and get busy in a hurry. You haven't time for routine laboratory work. When your diagnosis is as accurate as you think you can possibly make one, get busy. When you have an abnormal case you have to use every means you have, but I think we are getting too far away from our objective and subjective symptoms and are taking too much liberty. I saw a case of obstructed bowels carried to the hospital recently that had been obstructed 24 hours. He had the most pronounced symptoms I ever saw of obstructed bowels and pus appendicitis. They gave every test to find out where the obstruction was and wasted valuable time in making those tests; then they opened him up and found a gangrenous bowel, and the patient died the next day. Those preliminary examinations and blood counts and roentgenograms possibly caused that patient's life; otherwise any person who had any knowledge of an acute abdomen could easily have made a diagnosis of obstructed bowels. In other words the family physician sent the patient to be operated on immediately; he reached the hospital at 9 o'clock in the morning and was operated on at 8:30 that night and died the next day. When you have your objective and subjective symptoms so plain, do not let time be a factor in going into the abdomen, in order to have those different laboratory tests that you know are not going to avail you much.

Dr. J. M. Acker (closing): I thank the doctors for their discussion, particularly Dr. Crisler and Dr. Caldwell for their comments on the paper.

ACUTE OSTEOMYELITIS.*

H. A. GAMBLE, M. D.,

MERIDIAN, MISS.

Acute osteomyelitis is the most common and important acute inflammatory disease of bone, and has been recognized as a distinct clinical entity since the dawn of surgery.

My reason for taking this subject for discussion is that the consequences, both as regards the bone itself and the general system, are so disastrous if not recognized early, that one feels that the subject should be brought before our medical meetings from time to time.

Notwithstanding the voluminous literature of the past and the general recognition of the possibility of the condition developing, it is a fact that a large proportion of such cases are not recognized as acute osteomyelitis until serious damage has been accomplished.

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Anatomically, osteomyelitis is usually confined to the diaphysis of the bone. The reason for this is obvious when one considers the etiology and pathological anatomy present. While age, disease and trauma are contributing factors, etiologically osteomyelitis either develops as a result of the direct introduction of bacteria by some traumatizing agent, such for instance as a bone felon resulting from a pin or needle prick, the soiling of a compound fracture, or a bullet wound. The infections resulting from these are usually limited in their extent, and are not in general in the class which we wish to discuss.

Osteomyelitis as clinically seen, except from the above causes, is a result of a blood borne infection, and may or may not have some predisposing elements such as trauma, mechanical or chemical, or of some constitutional dyscrasia.

Anatomically, Lexer has shown that the shaft of the bone receives its blood supply from the nutrient artery, which in turn divides into a number of terminal arteries, and from the arteries of the periosteum. The epiphysis of the bone receives its blood supply from an entirely different source—the blood vessels of the epiphyseal area. Between the epiphysis and the diaphysis there lies an area in which the blood supply is very limited.

In the natural pathogenesis of acute osteomyelitis the introduction of the infective organism is by way of the blood stream, either as separate germs or as thrombi, which on account of the terminal character of the vessels becomes localized more often in the blood vessels of the bone on the diaphyseal side of the epiphysis and form a thrombus, with the further multiplication of the bacteria, clotting of blood and destruction of the surrounding bony tissue. This thrombotic process varies in extent—first, as to whether there is a tendency for continued spreading of it; secondly, the part of the nutrient blood vessel supply which is involved; thirdly, the virulence of the infective organism, and, fourthly, the coincident infection of any inflammatory exudate, and reaction on the part of the tissues. Unfortunately, if the nutrient artery becomes thrombosed shortly after entrance into the bone, which is not the usual course of the disease, the whole diaphysis will probably be affected and there will be massive destruction of bone tissue. Should there be one of the smaller branches only involved the destructive infection will be very much lessened. Fortunately, the vascularization of the periosteum is of such a nature that no embolic or thrombotic process of its vessel can effect to any large extent the surfaces of the bone; so that, even in the most marked involvement, there usually remains an opportunity for repair of the destroyed bone by way of the bone cells which are adherent to the periosteum.

From a clinical standpoint practically all cases of acute osteomyelitis originate because of a bacteremia which sets up a thrombo-embolic process involving the blood supply of the bone. Practically the same pathological picture is presented excepting in a lesser degree, in what is known as acute epiphysitis, which is to all intents and purposes an acute osteomyelitis. The pathological process resulting originates in the bone with the development of destruction of osseus tissue, formation of pus, the gradual spreading of the process to the surface where there results a subperiosteal abscess. This destructive process may spread up into the shaft of the bone involving the marrow and occasionally into the epiphysis rupturing into the joint, or where Nature is unable to combat the infection, becomes a localized abscess.

Predisposing causes of acute osteomyelitis: First, it is usually found in the adolescent rather than those of mature years, due no doubt to the marked vascularity of the growing bone, particularly in the regions of the epiphysis; second, the history of trauma is so often associated

with its development that there can be no doubt that it is a factor in lowering the resistance of the affected part to infection; third, it is far more prevalent in the male than in the female, the latter not being so prone to injuries as the former; fourth, devitalizing diseases which lower one's resistance are a frequent predisposing factor. However much influence any one of these factors may have as predisposing toward the development of an acute osteomyelitis, there is always present a preexisting focus of infection with a bacteremia. Frequently the focus of infection is evident, as for instance the furuncle, inflamed tonsils or infected lesions of any part of the body. However, while there are times when such a history is not available, it will usually be found upon close investigation that some atrium of infection existed whether or not it can be demonstrated.

The blood picture in the early stages of any acute osteomyelitis shows the presence of a blood stream infection. To summarize: for the development of an acute osteomyelitis, it is necessary that there should be some point of fixation in the bone, and the presence in the blood of either a bacteremia or infected emboli, which finds lodgment in the point of fixation.

The symptoms of osteomyelitis are variable in intensity. There is not always a clearcut picture upon which so much stress is laid—of unbearable pain, fever, and high blood count, although in many cases we do find such a fulminating type of invasion. When one takes into consideration the fact that the constitutional symptoms will vary largely as to the intensity of the bacteremia that is present, and the local symptoms as to the extent of the vascular supply involved, naturally there will be a decided difference in degree as regards the symptoms of pain, fever and blood count.

Some cases of osteomyelitis are very mild in their onset and run a low grade chronic course, due no doubt to the lack of virulence of the infective organism, the limited area of bone involvement, and the ability of the host to throw off or fight the infection. Other cases will show more marked symptoms, being ushered in with chill or rigor, high fever, pain and tenderness, high blood count and a marked bacteremia. There is a further type in which the bacteremia is the most important of the conditions present, the patient showing very mild evidence of focal infection with a high grade toxemia due to the number of circulating organisms in the blood; resulting in a severely toxic condition either typhoidal or maniacal in character, and usually terminating in death. In such cases the focal infection in the bone has very little if anything to do with the ultimate outcome of the case. Clinically the symptoms most to be relied upon are rigor or chill, fever, localized soreness or pain, a high leukocyte count with the presence in a large proportion of cases of a definite focal infection.

The prognosis as to life, morbidity and the restoration of function depends largely upon the early recognition of the condition and the time of active interference. One of the best criteria upon which to base a prognosis as to life is the extent of the bacteremia as indicated by the number of colonies in the blood culture, and as to whether or not it is persistent in its character. When there is a small number of colonies it usually indicates that the resisting powers of the individual are able to combat the infection. When the number is very large and persistent it is indicative of the lack of ability on the part of the host to throw off the infection and to clear the blood stream.

The time element is most important, upon it depends in large measure, not only the prognosis as to life, but the extent of damage which is inflicted upon the affected bone.

Diagnosis ordinarily rests between acute articular rheumatism, typhoid fever, and

in the fulminating type, the possibility of a meningitis.

Acute articular rheumatism is the one disease with which it is most often confounded, but if one will remember that in this affection more than one joint ordinarily is involved, osteomyelitis usually has a single focus of infection, that in rheumatism the pain is of a dull aching character and is confined to the joint and peri-articular structures, while in osteomyelitis the pain is of a throbbing, lancinating and often unbearable type, and is localized away from the joint in the diaphysis of the bone near the epiphysis; also that in rheumatism there is not necessarily present a leukocytosis, that in osteomyelitis it is rarely absent, it will not be difficult to differentiate between the two.

Typhoid fever has a low leukocyte count, osteomyelitis a high count. Typhoid fever a positive Widal, in osteomyelitis the Widal reaction is negative unless the patient has either had an attack of typhoid fever, or been vaccinated against it.

In those cases simulating meningitis, the delirium and meningeal symptoms present may mislead us; however a spinal puncture will clear up the diagnosis here.

TREATMENT.

I can do not better than to quote George A. Peters. He says: "There is no surgical disease in childhood in which well-considered promptness and well-controlled courage in regard to treatment are more urgently required or more signally rewarded than in acute osteomyelitis. The disease is one entirely beyond the reach of ordinary medicinal remedies, whether internally administered, externally applied, or hypodermically injected, as in the case of antitoxic serums."

The treatment of acute osteomyelitis in its early stages consists primarily upon the institution of free drainage. As previously stated, acute osteomyelitis manifests itself as an inflammation of the medulla of the bone, with or without the presence of a subperiosteal abscess. I wish to make myself clear; in speaking of the medulla of the bone, I am referring not only to the marrow containing cavity, but the cancellous bony tissue directly continuous therewith. It is necessary when providing drainage, not only to be satisfied with opening up a sub-periosteal abscess, but in addition thereto to make an opening directly into the subjacent bone. From year to year we have become more and more convinced that the subperiosteal abscess is not the original focus of infection, but that in most cases it is secondary to a suppurative focus, at some point in the diaphysis of the bone.

LeJars very rightly says that "There are two foci of infection in these cases of osteomyelitis. The periosteal peri-epiphyseal focus, and the medullary intra-osteal focus. It is absolutely necessary to open both foci, and the operation for osteomyelitis consists essentially in opening the affected bone."

When the periosteal abscess is opened, regardless of whether or not the bone appears smooth, it is wisest, and by far the safest to make an opening directly into the medulla and provide drainage for what experience has taught us is always present—an intra-medullary infection. The treatment of the bone in cases of acute osteomyelitis in the early stages should be simply the introduction of the trephine into the medulla, the relieving of tension, and provision of drainage by this means. If necessary, this opening can be enlarged with mallet and chisel or with Rongeur forceps, but the simple trephining of the bone will usually suffice, and oftentimes abort any further extension of the osteomyelitic process. At this time under no circumstances should there be a curettment of the medulla, first because of the danger of infection, and flooding of the system with a more intense bactermia; second, because it is impossible at this stage to determine which tissues are viable and which are not, and, third, because it would necessarily de-

stroy many of the endosteal cells upon which the repair of bone largely depends.

Bone differs from all other tissues in that regeneration takes place from the endosteal as well as the periosteal tissues. If the measures adopted do not remove the marrow and all of the medullary cells are not killed by the infection, Nature will soon set up repairs, and will oftentimes practically restore the affected bone to a normal condition.

Should there be no early intervention, and the system of the patient is able to weather the storm of the disease, we have the development of the sub-periosteal abscess, the formation of sequestra, fistulous tracts, and cloaca. When the condition has gone on to this stage it will usually mean that there will necessarily be a very protracted convalescence. The size and shape of the sequestra is dependent definitely upon the vascular area primarily affected. As this bone dies Nature attempts to throw up reparative processes both from within and from without, and we have as a result the sequestrum surrounded by a shell of new bone developed from the osseus cells of the periosteum plus new bone from the endosteal cells, with here and there claoca and sinuses leading to the surface, through which are discharged the pus and necrotic bone material.

Should the preliminary drainage not prevent the development of a sequestrum, it is in our opinion wisest to wait patiently for from eight to sixteen weeks, giving Nature ample time for delimiting definitely the area of necrotic bone. Then open up the affected area, unroof the bone the full length of the disease, and remove with as little damage to new bone formation as possible any sequestra which may have formed. Further treatment of this condition depends upon how far advanced repair has progressed. Our preference is to remove the sequestra and all obviously devitalized tissue, and if the wound is of recent origin to pack it with iodoform gauze, saturated with vaseline, which can be left *in situ* for several days.

We have recently been trying out packing these bone cavities with iodoform gauze impregnated with vaseline, and allowing Nature gradually to extrude the gauze as granulations fill up the cavity. However, we will not enter into a discussion of this phase of the subject, as our object today has been to present to you again the very important topic of acute osteomyelitis.

SUMMARY.

1. Acute osteomyelitis is due to an infection of the bone by pyogenic organisms, carried thereto in the blood stream.

2. The area involved in the bone is dependent upon the interference with the blood supply of such region by a thromboembolic process which contains the offending bacteria.

3. Practically all blood borne infections develop in the medullary cavity and affect the periosteal and sub-periosteal areas secondarily.

4. In all cases of acute osteomyelitis there are two factors to be considered, one the lesion in the bone, and the other the bacteremia.

5. The extent of the bacteremia is of decided prognostic aid.

6. In the treatment of acute osteomyelitis, it is a disease which brooks no delay, and necessitates early active intervention.

7. In the earliest stages the indications are to provide free drainage in the soft parts and sub-periosteal area, and to make an opening directly into the medulla of the bone.

8. In the treatment of subacute or more chronic cases the bone should be unroofed and any sequestra or dead bone removed, and under no circumstances should the endosteum be curetted.

DISCUSSION.

Dr. Gessner (New Orleans): It is a great pleasure to discuss a paper read by my old friend, Dr.

Gamble, for whom I have had a high degree of respect ever since I knew him as a student in medical college. There are certain things that are taught very positively and dogmatically, which I think sometimes positively do harm, and I am going to state a case which I saw recently, showing variation from the positive course usually outlined.

I saw last fall a little boy 12 years old, a school boy, who on a certain Wednesday got his last dose of anti-typhoid vaccine. On that day playing around with his fellow students, he got hurt about the leg. Next day, Thursday, he was sick, but went to school. On Friday he stayed at home, he was sick at home, complained of various joints until the following Tuesday. That was six days after his original injury. On that day he was brought to Touro Infirmary in New Orleans, where he was placed under the care of an able, experienced pediatrist, who made a diagnosis of acute rheumatism and treated him with hot applications for a week. At the end of that week an abscess over his left tibia was located, and I saw him on Wednesday, and operated on him on Thursday. Now here is the thing that is completely at variance with the usual dogmatic rule. He was struck simultaneously in four places, the lower end of each femur and lower end of each tibia. Dr. Gamble has said that where one bone is struck, and the fact that only one bone is struck is looked upon as evidence of osteo-myelitis. If more than one bone is struck you have a diagnosis of rheumatism. This boy was struck along both femur and both tibia. Incidentally a picture had ben taken which was negative. You all know, of course, that an early osteo-myelitis can not be recognized by an X-ray. Dr. Henderson is our roentgenologist at Touro; he came from Jackson, and when called on to make a diagnosis of osteo-myelitis with roentgen-ray he always declines. It must be remembered that an early diagnosis of osteo-myelitis by a roentgen-ray is not to be expected. I do not think the general practitioner thinks of that as he should. I cut down in this case over each femur and over the two tibia to where the abscess over the left femur had broken, with a chisel, and I found pus. There was a large abscess over each femur and after I opened the abscesses I did what Dr. Gamble has discussed, in the presence of pus with a bone not looking well, I opened the marrow of the femur. I opened it with a Hudson drill and I made an opening one-half of an inch in diameter. I found no pus. Here is another fallacy. Dr. Jno. B. Murphy, to whom we owe a great deal, said that when a man made a diagnosis of acute osteo-myelitis, all he had to do was to go to a hardware store and get a drill, sterilize it and bore a hole in the bone; in other words he made an impression that if you make a small hole you can go in there and the disease would not spread. In this case, although I did open the marrow of the bone there was no pus; although I made a large hole the disease did not stop. It spread and caused considerable damage to the bone. This boy has been operated on since and is now on the way to recovery. In the first place I want to stress that the multiplicity of attack does not exclude osteo-myelitis, although the syllabus of the attack only points in that direction. In the second place, we must not depend on the roentgen-ray, and in the third place, we must not sit down and think that a hole, even a big hole in that marrow, is going to prevent the spread of the disease.

Dr. H. A. Gamble (closing): I appreciate Dr. Gessner's discussion of this paper more than he can realize. Dr. Gessner used to be my teacher though he doesn't look it, and there are a great many things I have learned from his instruction. I am glad that Dr. Gessner brought out the point about the multiplicity of lesions resulting from osteomyelitis, and the possibility of there being more than one focus of infection. It isn't usually the case. You usually have a single focus of infection. The point he brought out in regard to trephining and not finding pus—I have done that and at the same time I have taken cultures from that opening and I have gotten a pure staphylococcic growth. That means that the infection had not reached the stage of pus formation. Another thing is the type of multiple openings for drainage purposes. For instance, opening the bone and cleaning it out is not advisable because of the danger of disseminating infection, and, secondly, if there has progressed a marked destruction of the bone it signifies that primarily the main nutrient artery is involved in the thrombotic process and that the tissue supplied by it will die. All that one can do under such circumstances is to make an opening to relieve tension and afford an outlet for any pus that might form later.

In regard to the use of the roentgen-ray in diagnosis of acute osteo-myelitis, I did not mention it, it has no place. It does more harm in the diagnosis of acute osteo-myelitis than any other procedure of which I am cognizant. It causes procrastination, and the essential fact which I have tried to bring out today is that acute osteo-myelitis should be recognized early, and in the treatment of it is necessary to act, and to act promptly.

SURGICAL TREATMENT OF ARTHRITIS.

JOHN T. O'FERRALL, M. D.,

NEW ORLEANS.

Despite long years of study, including much careful research, the treatment and cure of many cases of arthritis remains a baffling and interesting study. It is not proposed, at this time, to present an exhaustive treatise upon the diagnosis and treatment of the several types of arthritis, but to call to your attention some of the important clinical manifestations of both acute and chronic involvement of the major joints and the beneficial results obtained from the surgical treatment of them.

Acute infectious toxic and septic arthritis is generally manifested in a single major joint, principally the knee, shoulder, hip or elbow. Its onset is sudden, accompanied with more or less temperature, acute pain in the joint, especially upon attempted motion, increased local heat and swelling. Local redness may or may not be present. The history obtained from the patient often reveals the presence of, or the recent occurrence of, a sore throat, an active gonorrhea or an abscessed tooth. With such symptoms, whether backed up with such a history or not, we are conscious that we are dealing with an acute inflammatory joint lesion. The simpler laboratory examinations are now possible in the most remote localities; hence, a total and differential white blood count will reveal an increased leukocytosis and an increase in the polynuclear neutrophils.

With these laboratory findings further substantiating a diagnosis of an acute joint, the next diagnostic step undoubtedly is aspiration of the joint. It is unfortunately a fact that many medical men hesitate to perform this simple, but important, diagnostic operation and lose valuable time as well as the confidence of his patient, in some instances. With a 10 c.c. or 20 c.c. glass syringe, with a needle of large caliber and novocain or ethyl chloride, aspiration is simple, painless and harmless as applied to joints. If upon aspiration the joint fluid is found to be cloudy, from a slight degree to markedly turbulent, it will show numerous pus cells under the microscope, with or without micro-organisms. Such turbulence is the sign of destruction of the delicate synovial membranes, and demands surgical drainage of the affected joint.

It is a distressing fact that many of our medical men of the regular school, osteopaths, chiropractors and other ignorant persons have spread among the laity the misinformation that the opening of any joint and releasing of the synovial fluid will surely result in a stiff joint. Much of this misunderstanding has resulted from aspiration and immediate indiscriminate injection of formalin and other fluids into the joints.

What is meant by surgical drainage of a joint? It means complete evacuation of the infected synovial fluid by means of a free incision into the joint to reach every culdesac and thorough lavage of every part of the joint capsule with 1 or 2 gallons of warm normal saline solution or a solution of bichloride of mercury 1-20000. Drainage tubes or drains of any kind are distinctly contraindicated even in the most purulent infections. Complete resuturing of the incision is done immediately or the capsule is stitched to the soft parts and the joint allowed to drain as per the method of Willems. Except in the most purulent cases, immediate and complete suture of the incision should be done. Extension to the affected extremity is then applied and both active and passive motion begun in 3 or 4 days. Normal, functioning joints are obtained in cases seen up to 1 week after the onset of the joint infection.

The following resumé of a recent case will illustrate the progress of an acutely infected knee joint:

George K., an unusually healthy, strong young man, was seen March 22, 1927, at his business office. He stated that he had had no infectious disease of any kind for years. He had never had gonorrhea and his teeth and throat had not been affected. The night preceding my examination he had awakened during the night and felt some stiffness of his left knee. Upon changing his position in bed he again fell asleep. When he arose the day of the examination he again felt some stiffness and discomfort of the knee but walked more than 20 blocks to his office. This long walk was performed with ease except that he stopped once because of slight pain in the joint. After walking upstairs the joint began to give more pain, which rapidly increased until within an hour or so he was unable to stand or to move the joint even the slightest degree without great pain. I found him on a lounge in his office in great distress. The left knee was moderately swollen and somewhat reddened. The entire joint presented increased local heat and was exceedingly tender. Any attempt at active or passive motion was associated with great pain. His temperature was 101°F. He was immediately sent to the Baptist Hospital by ambulance. An immediate blood count showed 15,650 leukocytes and 84 per cent neutrophils. Forty-four cubic centimeters of exceedingly cloudy fluid was recovered by aspiration and microspocical examination revealed numerous pus cells but no bacteria or cocci. This aspiration temporarily reduced the temperature and leukocytosis. Ice cap was applied to the joint and Buck's extension to the leg below the knee. The following day the temperature and leukocytosis was increased. The joint was then opened by a long anterior-internal lateral incision displacing the patella to the outer side. The joint was found full of very cloudy fluid and all the synovial tissues and the capsule very markedly thickened. The joint cavity was washed out with two gallons of 1-20000 bichloride solution and the incision closed, leaving the capsule unsutured to allow drainage into the soft tissues. Buck's extension was reapplied. The patient's temperature and white count was gradually reduced and all pain disappeared. There was some reaccumulation of excess fluid which was aspirated. Motion was begun the third day and increased rapidly. The patient's progress was rapid and he began weight bearing in about three weeks. Within one month his active flexion was possible to 120° and with the use of physical therapy normal motion resulted. He has walked as far as 10 miles without interruption and engages normally in such activities as swimming, etc.

This patient's knee is just as normal and strong as the unaffected one and gives him not the least discomfort. No focus of infection was ever found and it is assumed that it was a haemolytic or metastatic transference of bacteria or cocci to the affected joint.

An even more difficult problem for solution is often presented to us in the form of the residual major joint involvement in cases of chronic multiple arthritis. We have all seen numerous cases of polyarthritis in which a long and persistent search has been made for the offending focus of infection. Usually the teeth and tonsils are the first possible foci to be removed and after allowing much time to elapse, after such operations, both the patient and the physician experience great disappointment because the chronic swollen joints remain unchanged. The pelvis and prostate are then accused as the source of the toxic or infectious material and are cleared up, but after the eradication of such foci the joints are still painful, swollen and limited in motion and the synovial tissues and capsule thickened. The gall-bladder and gastro-intestinal tract are next thought to be furnishing sufficient noxious substance to the general joint involvement, especially the major joints such as the knees, to justify removal of the former and thorough cleansing of the latter by means of laxatives and colonic flushes. After going through such treatment, both medically and surgically for long periods of time, again the patient, the family and the physician are depressed because the pain, disability and joint pathology remain the same.

The foregoing is a familiar story to us all and many times the patients have passed through many hands in and out of the profession. Drug addictions have occurred as well as marked deformities.

It is right and proper that these many foci have been removed or investigated and that time should be allowed to elapse in order to give an opportunity for anticipated improvement. It is possible and proper, however, that deformities should be prevented by means of adequate splinting, traction and correct bed posture, while in-

vestigation and treatment is in progress. It is agonizing for the patient and harrowing for the physician but it is correct to treat such cases in such a manner.

It is only after these many measures have been instituted and failed and time has elapsed that our attention is directed to the local condition of the major joints, especially the knees, and their contents. In such cases the knees are found to be swollen in a more or less fusi-form manner, the joint capsule is thickened and the joint cavity is filled with semisolid material, which, upon palpation, gives one the feeling of a gelatinous mass. There is no redness or acute tenderness but the joint motions are distinctly limited and often quite painful. There is of course marked atrophy of the extremities between the joints due to long disuse and lack of muscle tone.

It is certain in most instances that we have now to deal with the real offending foci of infection. The synovial membranes have, as before mentioned, become thickened and inflamed, due to the invasion of the original bacterial or toxic irritant and are unable to again restore themselves to the normal. They have become the offending foci of infection themselves and are harboring the cocci, bacteria or toxins and furnishing in addition enough toxin to keep active the other affected major and minor joints. The pathology is much like tonsils that harbor infection and furnish toxins to many parts of the body without manifesting a frankly diseased condition themselves. It is obvious, therefore, that this infected material within the major joints themselves must be removed surgically.

The operative procedure indicated for the removal of this offending material is known as synovectomy. It is accomplished, if the knee joint is to be entered, by the above described long anterior-internal lateral incision, extending from the upper limit of the upper cul-de-sac down the middle of the thigh to the upper end of the patella, swinging around the inner border of the patella and then to the tibial tubercle or attachment of the patella tendon to the tibia. The patella is retracted to the outer side of the knee, thus exposing to full view the entire joint cavity. Upon entering such a joint, large quantities of rice bodies may escape; large masses of the completely degenerated synovial membranes are found which appear much like fresh butter but firm in consistency; large amounts of granulation tissue are always present and are completely removed. The post-patella pad of fat is found markedly hypertrophied and is also carefully excised. After such mechanical cleansing of the joint, the hemorrhage is carefully checked and the capsule and other overlying soft parts are closed completely in the usual way. Buck's extension is applied to the affected extremity and motion begun in 3 to 5 days. Weight bearing is allowed in 2 to 3 weeks. Physical therapy is a great aid in increasing the joint function which is seldom more than moderately interfered with.

It is necessary to carefully select the cases for synovectomy or disappointment is sure to be experienced. The joints must be entirely quiescent and must be considered the major sequelae of the multiple arthritis. It is of more than passing interest to see the marked relief from not only the joints operated upon but also the remote joints.

The following case history will illustrate a typical experience:

Miss H., seen November 7, 1927. Unmarried. Age 40. Two years ago began to have pain and swelling in the second joint of the right index finger. No redness. Shortly afterwards she began to have a similar involvement of the knees, elbows and shoulders. Pains radiated down the arms and legs especially at night. About this time an abscess of her teeth occurred and she had them all removed. No improvement took place. Her tonsils were then thought to be diseased and were removed. Still no better, suffering principally with pains in joints and long bones. A Wassermann examination was said to be 3 plus positive and she was put on mixed treatment. At this time baking of the joints was being tried. The joints of the fingers then seemed to improve temporarily. Shortly thereafter her pelvis was

examined and found negative. She was then given various medicines internally, including mixed treatment, with indifferent relief. Colonic flushes were given for several months and at first were thought to give some relief. A second Wassermann examination was found to be negative. The patient had short periods of relief and then periods of great pain and disability. The fingers remained swollen and the knees showed greater involvement. There was no redness of the joints but organized degenerated tissue could be felt in the knees. Her symptoms and treatment had extended over a period of about three years without improvement. The greatest evidence of pathology was found to have located in her knees, but pains persisted in hands and shoulders as well. The synovial degeneration was very evident clinically, and operation was advised. The right knee was opened and the cavity found filled with a large mass of degenerated synovial membrane which was firm in consistency but appeared like fresh butter. Granulation tissue, fat and the internal semilunar cartilage were removed. The patient's recovery was prompt and all pains disappeared in a few days. Motion of the joint developed rapidly but present flexion is possible to about 100°. Patient did not return for the operation on the left knee for over two months. She stated she had complete relief until a few days before her return. The left knee was then opened and about a pint of rice bodies, a large amount of granulation tissue and fat were removed. Her recovery and the development of joint motion has paralleled the first joint opened. Patient has had no pain and is now walking about, although her last synovectomy was November 15, or about 3 weeks ago.

CONCLUSIONS

1. Acute painful monoarticular arthritis should be carefully investigated and prompt and adequate surgical measures instituted promptly when indicated.

2. Physicians as well as laymen should be discouraged from holding to the idea that to open a joint means certain ankylosis.

3. Chronic arthritis is often kept active by retention of infections within the major joints. Removal of such infected material is necessary to effect a cure in many cases. Careful selection of cases to be operated is essential.

4. Drainage tubes, rubber tissue drains or any other forms of mechanical drains are contraindicated in joint surgery.

REPORT OF 1,000 CASES OF HEMORRHOIDS TREATED BY OFFICE METHODS.*

J. W. WARREN, M. D.,

NEW ORLEANS.

So much hocus-pocus has been given out concerning the office treatment of rectal diseases that in order to get at the real kernel of the nut, I found it necessary to go directly to the best men in America doing this line of work and assist and work with them in their office and private practice, and to stay with them long enough to absorb at least a part of the principles and technique. It was a revelation. In one office, case after case of rectal fistulas in all stages of healing, came in for treatments once or twice a week with no time lost from business or work and resulting in final cure. Three of these proctologists were keen scientific thinkers, having originated their own methods. But they were hobby riders, each to his own method, to the exclusion of all others.

Trying out, comparing and combining these different methods and modifying them to some extent, has been my work, adhering always to the old Biblical injunction: "Prove all things and hold fast to that which is good."

In the treatment of internal hemorrhoids at the present time I use three methods, viz: quinin and urea hydrochlorid, cresylic acid, and phenol. Each of these agents has a different action, is used in a different way, and in a different type of case. One of the three or a combination of two of them is suitable and efficient in 97 per cent of all cases I have examined. These are scientific methods, and as in all truly scientific therapeutics the essentials of success are, first, accurate knowledge as to the action each of these agents will produce; second, correct diagnosis of the actual pathology present in a given case,

*Read before the Orleans Parish Medical Society, November 26, 1928.

and, third, the selection of the agent which best corrects that pathology.

In general, cases of the hemorrhagic type with dilated blood vessels and increased blood supply are suitable for the quinin and urea hydrochlorid method because its action is to reduce the blood supply to the hemorrhoid. Five to fifteen minims of a 4 per cent solution with ½ per cent novocain is used. It is therefore injected not into the hemorrhoid, but above it, around and among the supplying blood vessels contained in the vascular area between the muscular and mucous coats. This produces a fibrinous exudate around these vessels, choking off the excessive blood supply, thus starving the over-fed pile, which begins at once to atrophy. Judgment must be used not to carry this limiting process too far.

There is one notable exception to the above rule, viz: there is a large growth often seen low down, sometimes called a mucous pile, which may be freely injected with quinin and urea hydrochlorid right into the centre, and the result is almost magical. One treatment causes the entire disappearance of the growth within forty-eight hours. An error of diagnosis will cause regret.

In milder and more recent cases where the general blood supply seems to be fairly normal, cresylic acid in vegetable oil, 1 or 2 per cent, is mild and efficient. But again it should not be injected into the middle of the pile but submucously only. This produces a peri-phlebitis and peri-capillitis, restricting the larger and actually obliterating many of the false vessels which make up the hemorrhoid, thus promoting rapid absorption or atrophy. As many as twenty of these pathological veins have been observed in a cross-section of a hemorrhoid.

In more obstinate cases, where there is more fibrosis, a combination of these two methods, alternating weekly, proves more effective.

In anal and rectal prolapse, phenol in similar strength or stronger may be injected between the detached mucosa, and the wall or muscle from which it was separated. This produces an inflammatory adhesion and re-attachment, tightening the relaxed membrane and correcting the prolapse. It is important to begin at the highest point of detachment and treat downward, week by week.

If the injection of hemorrhoids is correctly done, there is no pain at the time of the injection nor afterward. The majority of my patients, especially the nervous and apprehensive kind, are treated the first time without their knowledge, *i. e.*, while they believe only an examination is being made.

In hemorrhagic cases 90 per cent cease losing blood after the first treatment and cease protrusion after the second or third. From three to six repetitions of each hemorrhoid, a week or so apart, results in normalizing the excess blood supply and tightening up the relaxed mucosa. Gradual atrophy of the tumors begins in twenty-four hours and continues, with added treatments, to final disappearance. At the original sight of a hemorrhoid the mucosa, instead of being loose and boggy, appears tougher, paler and is tightly adherent to the muscle wall.

The primary cause of hemorrhoids seems to be the absence of valves in the hemorrhoidal veins. In the upright position of man, the weight of the ascending column of blood falls downward on these delicate valveless veins, mechanically producing the venous dilatation and multiplication known as hemorrhoids. It is difficult to avoid the conclusion that the "Genus Homo" was originally created to walk upon all fours.

REPORT

1012 cases of internal hemorrhoids examined in 7 years.

782 of these protruding type.

320 of these hemorrhagic type.

38 strangulated at first visit.

163 were complicated with rectal fistulas.

114 were complicated with anal fissures or painful ulcers.

48 were complicated with polyps which were removed.

32 were complicated with skin tabs or external hemorrhoids which were removed after treating the internal hemorrhoids.

38 cases had previously been operated for piles, five of these twice and one three times.

6 cases treated for internal hemorrhoids during pregnancy. 4 of these had suffered very much from hemorrhoids at the preceding delivery. Of course, these patients were treated lightly and extra precautions taken to avoid any pelvic irritation. There were no miscarriages and no hemorrhoidal complications at the succeeding deliveries.

9 cases, or about 1 per cent, were operated, hemorrhoidectomies. Another 2 per cent should have had the radical operation, and were so advised but refused operation, so that 3 per cent really needed the radical operation.

805 of these cases were discharged, the others failed to return to be completed.

27 of the discharged cases have had some return of the hemorrhoids after from one to seven years, and have been treated a second time, and one case a third time.

The office method has its disadvantages: Patients from distances have to remain longer with the doctor or make several more or less expensive visits, for, while relief begins at once, complete atrophy requires some weeks.

By far the greatest disadvantage of this method is the possibility of the hemorrhoids returning. The late Dr. J. D. Albright, of Philadelphia, told me that I might expect about 3 per cent of returns. In my 800 cases discharged you will note 27 returns, or nearly 3½ per cent. Well, when all are in, it may be 4 or 5 per cent; that is a small matter, because I find that returns are slight, only two or three treatments being again needed. All patients are instructed to return promptly, if and when the need is felt.

Advantages of the office method: There is no operation, no bed, no hospital, practically no suffering, no hospital bills, no nurse bills. Five minutes in the office once or twice a week, patient continues to earn his salary, to hold his job or to keep up his business. Working patients earn enough during treatment to more than pay for same. One physician patient told me that the time lost in bed for a hemorrhoidectomy would have meant a thousand dollar loss to his practice. To some of you here and to many others, it would mean more than that.

Still another advantage, of the greatest importance, is that the method leaves the natural structures and safeguards of the anal canal intact, and unimpaired. Wise old Mother Nature designed very important and delicate functions of control and comfort for the little anal valves, the crypts, the columns and the papillae, and she exacts serious penalties for their removal. Thanks to surgical progress, old brother Whitehead's operation is rapidly becoming a relic of past errors; fibrous annular stricture is worse than hemorrhoids.

Finally, there is nothing illegitimate about the method, only an old prejudice. There is nothing unethical about the method when practiced by ethical men. There is nothing secret about the method, for science belongs alike to everybody.

I am frequently asked about slough. Gentlemen, the day of slough in rectal work has passed, just as the day of "laudable pus" has passed in general surgery. I have had a few small local fissures at the point of needle puncture, sometimes resulting in some pain and a little blood, but never serious, the patient not even going to bed and always healing without further mishap. These are to be regarded the same as little stitch hole abscesses in surgery, viz: a little slip in technique somewhere.

A physician friend warned me to be very certain about my statistics as to deaths, tetanus, and other general infections following hemorrhoidal treatment. As there has never been a single death in my prac-

tice, nor a single case of tetanus or other general infection, I put the question up to a couple of the biggest men in the world doing this line of work, men who number their patients by the thousands instead of hundreds.

Dr. J. F. Montegut, Thirty East 40th St., New York, says: "In answer to your inquiry as to whether I have seen tetanus or other general infection following injection of hemorrhoids, my answer is plainly—no." Dr. Montegut is a strong advocate of the cresylic acid method.

Dr. E. H. Terrel, Richmond, Va., is the Father of the quinin and urea hydrochlorid method, and if you will write him, he will gladly send you a reprint telling you all about this method. He says: "I have been using quinin and urea constantly since the early part of 1913. During this time, I have used the remedy in approximately five thousand cases of hemorrhoids. In no single case has there been symptoms of tetanus or other systemic infections. Of course, thert have been a few minor local infections, about one-half dozen all together."

DISCUSSION.

Dr. W. A. Love: It has been my pleasure to observe the work Dr. Warren has done over a period of the past fourteen months. During that time I have not been able to refer as many cases to him as I would like, but I have here the data on sixteen treated, besides myself. I approached this method with fear and trembling on the infection and septicemia basis, but after talking to Dr. Warren I thought I could take my chance along with the others, since they did not die. Of the cases referred in the past fourteen months, fourteen were cured and two of the later cases are still under treatment. Among these cases of hemorrhoids, two were accompanied with fairly complete prolapse, seven complicated by fistulae; ten, ulceration and bleeding, and two complicated by peri-rectal abscess. Of these, six lost time from work. The average time per case was 26 hours. One case lost a maximum of 48 hours, and the minimum case, which I take great pride in being my own, lost four hours. Of these cases, eight of the seventeen were complicated by constipation and ten were complicated by gas distension.

In discussing Dr. Warren's paper I am not in a position to discuss his technique, as I only know what he told me and what I experienced myself. The question of constipation resulting from rectal irritation with intestinal gas distension and the toxemia that goes hand in hand with this constipation, I explain to myself along these lines; that this constipation and gas distension are the result of a reverse peristalsis that is said to be due to the irritation of the rectum, a condition resembling partial intestinal obstruction taking place. Alvarez explored on rabbits, without the use of novocaine or cocaine, pinching the ileum in a circular manner with forceps to produce irritation. On opening the rabbit several hours later he found intestinal obstruction taking place (the same thing, only in a lesser degree, that we find after closing the cecum in appendectomy); he found a spastic condition with the bowels in contraction, the bowel above the point of irritation empty, showing that the normal gradient meeting the downcoming wave had produced a block beyond which nothing could pass. Kernsten, on the other hand, cut the ileum of a dog and sutured the cut end; he found that food coming down would pack against the closed end. Irritation is one of the things that produce reverse peristalsis. It can be produced anywhere in the gut, to my way of thinking. This irritation anywhere along the intestinal tract will produce waves of peristalsis which go back from anus towards the cecum, meeting the oncoming downward peristaltic wave, causing constipation and obstruction. Irritation will often produce lesions in the mucous membrane of the intestine and in addition to this reverse peristalsis there will be motor insufficiency; therefore the rectum must be emptied in these cases of irritation, or later on it will lose its nerve tone to where we have the irritated condition complicated by impacted feces in the rectum. Dr. Warren believes that if we can relieve these cases that it is our duty to use any means possible.

In conclusion I wish to state that I am not only delighted with my personal experience with this treatment, but delighted with the results I have had occasion to observe in the sixteen other cases where this method was employed.

Dr. H. B. Gessner: I should like to know how Dr. Warren makes the hemorrhoids present. Does he stretch the sphincter with the fingers, or bring out the hemorrhoids with a suction (Bier) cup? Another thing I should like to know is whether, when he inserts the needle, he pulls back on the piston so as to make sure it is not entering a vein?

Dr. E. H. Walet: In the cases complicated by fistulae, how were the fistulae dealt with? What method was used to cure the fistulae?

Dr. B. A. Ledbetter: I spent six weeks in Battle Creek, Michigan, this past summer and Dr. Martin informed me that he has used this method with wonderful results.

Dr. Maurice Lescale: The successful treatment of hemorrhoids whether carried out in an office or hospital depends primarily on the method used. The surgical methods are in my opinion best because they give the most assurance of a permanent cure. The injection method as usually recommended at the present time is supposed to produce a fibrosis which causes the veins to be obliterated and also a contraction of the aerolar tissue which is an important part of the hemorrhoid. Some atrophy of the veins and connective tissue does take place, but the mucous membrane does not shrink correspondingly and a sack is often left with no support. Further trouble is bound to take place in many of these cases.

Many patients fearing surgery start with the injection treatment but have operations forced upon them by later developments. In June I was consulted by a man who gave this history: One year previous he submitted to the injection treatment for four hemorrhoids. During the course of treatment he was told that four fistulae showed up. He submitted to operation to have these cut out. At midnight he had a bad hemorrhage which was stopped only with difficulty. My examination of him revealed a rectum looked like some hemorrhoids instead of fistulae had been operated upon and some unhealed ulcers still remained.

A past-president of the American Proctologic Society has related his personal experience: When his hemorrhoids were injected he felt a little tenseness for ten or fifteen minutes. He was completely relieved for several years, but then there was a recurrence of the hemorrhoids. Were it not for his advanced age he says he would submit to an operation and be permanently cured of them.

Dr. Allan Eustis: It looks to me as if the medical men are the principal ones championing this procedure, and I frankly admit I am a convert to it. I was consulted two years ago by a patient and having the usual prejudice against the injection method, also a fixed idea of subsequent sloughs and septicemia, I decided against it. It happened that a relative of mine who had been subject to hemorrhoids for about fifteen years was recommended to take this treatment. I used my influence with her to be operated on, but she said she could not think of undergoing an operation. She was a patient of Dr. Love so I spoke to him about it, and he gave me his personal experience. I then advised her to go ahead. That might be one of the cases Dr. Warren spoke of. She received her first treatment at the first examination and did not know she was getting the treatment. She is a highly nervous individual and has been completely cured for about a year now and has enjoyed one year of perfect comfort. I have another relative, a brother, who has suffered a great deal, whom I referred to Dr. Warren for the treatment. I tried, but without success, to get him to return for further injections but he has had complete relief for the past six months, and is satisfied.

All I can say is that since my conversion I have referred about six or eight cases to Dr. Warren and every one of these cases, to date, have had admirable results.

Dr. J. W. Warren (closing): Answering Dr. Gessner's question as to how I go about making the hemorrhoids present, I do not make them present. I take a Brinkerhoff speculum, pass it well inside the rectum and treat them right there in situ if I am going to do the submucous treatment with cresylic acid. If I am going to use the other treatment, I go above the hemorrhoid and pass the needle on the bayonet (demonstrates the method with drawings on the board), so that I do not want them outside. In stangulated cases, where they are on the outside, I work on them until I get them inside and I caution the patient not to allow them to prolapse for a day or two. In painful strangulations divulsion under local gives great relief.

Now in regard to the question whether I aim to introduce the solution between the veins, that is, take pains not to inject into the vein. If you will recall your anatomy, you will remember that the blood supply comes down the gut between the mucous coat and the muscular coat and just about the upper part of the hemorrhoid these vessels branch out. I go right into that region and inject the solution, making no attempt to avoid going into the vein. If you should inject some of the solution into the vein (the whole dose is but one grain) no harm is done, but you have lost your load, it does no good, and the injection must be repeated at a later date. In malignant malaria we often inject ten to fifteen grains of quinin and urea right into the vein.

I have frequently been asked about the risk of making a clot (embolus) inside the vein. You know that we inject that in the vein all the time. I have never seen or heard of a case; men doing this work in thousands of cases tell me they have never seen a case. I have had patients who complained of a little singing in the ears (quinin effect), but even if one has an idiosyncrasy for quinin, to give him one grain would produce no noticeable effect and there would be no danger.

How to handle fistulae. That is a big subject and it would take very much more time than we have at present to go into the details of treatment of different types of fistulae. Just in a nutshell, I use four different methods of treating the fistulae, all depending on what examination reveals, whether a complete fistulae where the fistulous tract goes behind the sphincter, that is, outside of the sphincter ring; or whether through the sphincter fibers; or whether inside the sphincter ring, that is what I call a marginal fistula; or an incomplete or blind fistula. After determining the nature of the fistula I then adopt the procedure that I consider best adapted to the correction of that particular type of fistula.

BACTEREMIA: COMPLICATING ACUTE OTITIS MEDIA*.

D. C. MONTGOMERY, M. D.,

MERIDIAN, MISS.

"General Sepsis of Otitic Origin" would have perhaps been a better title, and yet the word sepsis carries with it the idea of a much more serious condition than it is my intention to discuss.

We are all predisposed to regard an acute otitis media as a more or less simple matter. After we have performed a paracentesis of the tympanum, we frequently give instructions to the patient if an adult or to the mother of the child as to the management of these cases at home with an occasional trip to the office to see how the case is progressing. I fear we are more or less influenced by the attitude of the family who feel that a running ear is an annoying but simple thing that will get well in time, and who frequently object to so many treatments at the office. If the case be a child we often have to contend with the interfering neighbor and friend who ridicules the doctor's efforts to have the patient return for many and useless treatments, frequently stating that she has a friend who has a child who had a running ear for months, and finally got well without any treatment at all.

I think we will all agree that an acute suppurative otitis media is never limited to the cavity of the middle ear. There is always, in every case, an invasion of adjacent areas. This may be only the adjacent antrum cells, but more often the invasion is much more extensive. We all know that the majority of these cases present a symptomatology sufficiently mild both locally and constitutionally to consider them as simple otitis media cases. This paper is not concerned with these cases but with that smaller group that present serious symptoms, often from the inception of the infection, the proper treatment of which is often very puzzling and difficult to determine. I think we all have come to realize, in the past few years, that the indications for operation based on physical signs and symptoms as laid down in our text books are misleading to a large extent, and that, if we wish to return our patients to health and strength, we must learn to operate earlier and to recognize danger signals than those otherwise mentioned.

I believe firmly that the acute cases of otitis media are essentially hospital cases and should be hospitalized immediately. We cannot hope to cope with, diagnose and treat these cases otherwise. The earlier such control is instituted the better the prognosis.

I wish to emphasize the importance of thorough examination, especially by the laboratory, embracing a complete blood, hemoglobin, leukocytes, red blood cells, differential, blood culture, and a culture from the ear, which to my mind is of greatest importance, as the type of infecting organism frequently aids us in prognosis. If we know the type of organism present we are at once in a position to make a decision in a doubtful case.

Right here it is well to mention the type of bacteria present. We know that the streptococcic group produces the most virulent cases. The streptococcus mucosus capsulatus (Pneumococcus type III) is the most virulent and also the most insiduous of the group. With this type we

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always have a very seriously sick patient, and with very little local pathology present even on operation. The next most virulent type is the hemolyticus and is most commonly found in the thrombo phlebitis of the lateral sinus and in the bacteremia cases. Third, the streptococcus viridan which is less destructive than the preceding types.

With these few introductory remarks I will now pass on to the discussion of the title of this paper, bacteremia associated with acute otitis media or otitis sepsis. Does this condition occur without the formation of a thrombus in the lateral sinus or in the smaller veins in the temporal bone? I am convinced that in children such a condition occurs, and much more frequently than we think. In children the floor of the middle ear may be very thin or absent and direct invasion of the jugular bulb is possible. I also feel that a badly performed paracentesis of the tympanum with injury to the inner wall of the middle ear may be a causative factor in procuring a direct means of entrance for the invading organism to the blood stream.

I have recognized and treated twelve cases of otitis sepsis or bacteremia without opening the lateral sinus or ligature of the internal jugular, and nine of these cases without other operative procedure than a paracentesis of the tympanum, with one death, and this case was an operated case and unconscious when admitted to the hospital.

All observers apparently agree that a positive blood culture means a periphlebitis which if not operated is followed by a thrombus within the lateral sinus. All recognize or credit Nature with accomplishing a cure in occasional cases by the formation of a thrombus which becomes sterile, invasion of the blood stream stops, the patients' blood takes care of the bacteremia and becomes sterile, the clot becomes organized, absorbed and obileration of the sinus results and the patient gets well.

I am convinced, however, that we have an invasion of the blood stream without a periphlebitis and without the formation of a lateral sinus thrombosis, and the patient gets well without any of the serious complications developing.

In a recent article an author states "That in every case of otitis sepsis early or late, mild or virulent, our primary and most valuable single measure is the ligature of the internal jugular vein, even though you may believe you have not a phlebitis to deal with. Whether the sinus is opened or not is to my mind of secondary importance." I cannot agree with this statement at all. Further on in this article he states that "It is obvious that we have a goodly number of sepsis cases due entirely to invasion of the blood stream through channels other than the sigmoid sinus," and with this I fully agree and feel that we should be fairly well convinced that we have a periphlebitis or thrombosis of the lateral sinus before resorting to internal jugular ligation, which is often fraught with some danger to the patient. Ligation of a thoroughly palulous jugular and lateral sinus results in rather serious symptoms, but where Nature has done this thoroughly and slowly by formation of a thrombus with ample time for the completion of collateral circulation very few symptoms develop from a ligation lower down below the clot.

I have seen these cases, to be reported later, apparently of simple otitis media with persistent temperaturt of 100-101°, with no definite signs of surgical mastoid involvement and seemingly not very sick show a positive blood culture of the invading organism, get well without any operative procedure whatever. I have seen cases progressing nicely for a couple of weeks, and suddenly develop a high temperature for a few days and shows a positive blood culture and get well without operation. The main difficulty is

the differential diagnosis. To determine whether there is a thrombosis of the lateral sinus or not, for upon this depends whether we subject the patient to a most serious major operation or merely to a blood transfusion. The treatment always to my mind is a blood transfusion, to be repeated as necessary according to the condition of the patient, and most important depending upon the analysis of the blood examination. The destruction of the erythrocytes and a low hemoglobin percentage associated with temperature, chills, etc., is more important than a high leukocytosis or increased polynuclear count.

Lillie of Rochester uses germicidal dye added to the blood, the choice of the dye depending on the organism, mercurochrome for Gram negative organism, and gentian violet with the blood for Gram positive cocci. I have tried both but am convinced that blood transfusion alone is of much more value, and acts not only as a supportive therapeutic measure but is curative as well. It also adds a considerable number of new oxygen carriers, and third it furnishes a powerful hematopoietic stimulus.

I have seen acute suppurative otitis media complicating pneumonia and with a positive blood culture. Of course here it was impossible to determine the origin of the sepsis, but we certainly would not have been justified in ligation of the jugular and exposure of the lateral sinus.

Hays in his book reports two cases similar to the above. One a case operated on both sides. On the twelfth day this patient had a chill and temperature rose to 104°; later the temperature was 106°. Blood cultures wert negative; however, a blood transfusion was given and patient's temperature went to normal, and remained so. His second case was somewhat similar, the temperature going up and down for a week with repeated negative blood cultures. Blood transfusion caused the temperature to return to normal and patient immediately got well and remained so.

REPORT OF CASES.

Case 1. Wilson, aged 7 years, had been to my office three weeks previous to his entrance to the hospital with an acute suppurative otitis media. The discharge had persisted for two weeks in a mild form. There had been none for the past seven days and the patient had been regarded as well. On the eighth day after the ear had stopped discharging the patient was taken with a severe chill and his temperature went to 106°. This was repeated on the second day and on the third, on which day he was admitted to the hospital. In view of his recent history a most careful examination was made of this ear. The drum was practically negative, no discharge, no bulging, cone of light returning, maleus and short process distinct, no tenderness over mastoid, tympanum incised but nothing found. A roentgenogram was negative for mastoid destruction. The blood picture showed 80 per cent neutrophils, with the total leukocytes 22,000. A blood culture was positive for streptococcic hemolyticus; all other examinations being negative. A blood transfusion was given on the second day of admission. Two days later with the hemaglobin and red cells decreasing, and the temperature and chills still being present, a second transfusion was given. Two days later the temperature did not rise above 101° and then gradually returned to normal. The blood culture became negative three days after the second transfusion. The patient was dismissed as cured two weeks after admission.

Case 2. Joe T., aged 4 years, began to have pain in both ears two weeks ago. The examination showed abscesses on both sides. The drums were incised with a discharge of thin serum from both ears. A culture showed streptococcus hemolyticus. For the first few days the patient ran the usual course, with a free discharge from both ears and a temperature from 99° to 100°. On the tenth day the patient apparently had a chill and the temperature rose to 105°. This was repeated for the following two days. Examination failed to show any evidence of mastoid cell destruction. A roentgenogram was negative; the drums were flat and not bulging. The total leukocytes numbered 12,000, and the differential count showed 75 per cent neutrophils. A blood culture was taken and showed a few colonies of streptococcic hemolyticus. A transfusion of blood was given on the fourteenth day. The temperature returned to normal within twenty-four hours, and for the next week did not go over 100°. Two subsequent blood cultures were negative. This case was not operated and was very similar to the preceding one.

Case 3. Mary Q., aged 5 years, had had a mild case of influenza followed a week later by an acute bilateral suppurative otitis media. Both

drums were incised and there followed a free discharge of pus. This continued for about two weeks during which time the patient was doing well, having no temperature, up and playing around. The culture from the ear showed the presence of streptococcic virigans. About this time she began to run a temperature of about 101-102° daily, always highest in the afternoons. The physical examination was negative including the lungs and heart. There was no pyelitis, urine being sterile on culture. An examination of the ears did not show any definite signs of deep involvement of the mastoid cells apparently, though of course we knew from the discharge that there was some involvement present, yet we did not feel it necessary to operate. The blood culture was positive on two occasions for the same organism. Transfusions and germicidal dyes were both refused by the parents as was operation when later advised. Treatment was supportive in a large measure, careful attention was given both ears in the matter of local treatment. She continued to run about the same temperature for two weeks and during the time a second blood culture was taken and found positive The temperature however at the end of two weeks began gradually to return to nearer the normal limits, and at the end of a month was normal and the patient made a complete recovery.

Case 4. Mary S., aged 5 years, began to have trouble one week before being admitted to the hospital with sore throat, moderate temperature and nasal discharge. This condition persisted for several days, and on the seventh day the patient apparently had a chill and her temperature rose to 106°. She also complained of a right earache. The following day she was admitted to the hospital. Examination showed a post nasal infection pharyngitis, tonsillitis, and the right tympanum was reddened but not bulging. A paracentesis was done with the escape of blubber of air and a little serum. A culture showed streptococcic mucosus capsulatus. A blood culture was made at the same time and showed the same organism in forty-eight hours. A transfusion of blood was given and repeated every other day for three doses. The patient continued to have a chill and a temperature of 105° every day until the tenth day when she missed the chill and then the fever gradually subsided and returned to normal. The discharge from the ear was never profuse and there was never at any time any apparent involvement of the mastoid demanding surgical intervention. The leukocyte count never went above 15,000. The ear was dry in two weeks, and the patient was dismissed cured without any further surgical intervention.

There were four other cases similar to those just described, the involving organism being streptococcic hemolyticus in three and mucosus capsulatus in one. All received blood transfusions and none had any further surgical procedure other than paracentesis of the drums. Three cases had both ears involved and one case had one ear involved. All these cases got well in from one to three weeks. One case had a metastatic abscess on the right ankle which was opened and drained and the same organism obtained from the pus. Two of these cases ran a temperature not higher than 103° degrees at any time and without distinct chills.

Case 9, a boy of seven years, was admitted to the hospital with a discharging ear of one week duration and with evident involvement of the mastoid, following an attack of influenza two weeks previously. A simple mastoidectomy was done without exposure of the lateral sinus. On the third day the patient had a chill and a rise of temperature to 104°. Blood examination showed a leukocyte counte of 18,000. A blood culture was taken and was positive in thirty-six hours for streptococcus hemolyticus. The following day he had another chill and a rise of temperature. The mastoid wound was reopened and the lateral sinus exposed. In spite of the healthy appearance of the sinus without granulation on it or appearance of inflammation, the sinus was opened and found to be absolutely patulous, and no evidence of clot present anywhere. No ligation of the jugular vein was done. The patient was returned to his room and a blood transfusion given, which was repeated four times at intervals during the following month. This patient had a stormy time during this period but eventually the temperature returned to normal, blood culture became sterile in two weeks, and the patient was dismissed well.

Case 10. An infant of nine months was admitted to the hospital in a semi-conscious condition with a temperature of 106°, a discharging left ear and a swelling behind the auricle and over the mastoid, apparently due to pus. The age of the child precluded the diagnosis of a mastoid abscess because of the known fact that only an antrum was present; there being no developed mastoid cells. The condition was evidently an abscess under the periosteum of the external canal due to the pus from the middle ear dissecting up along the canal wall to find exit above the mastoid. This was incised with the discharge of a very thick pus, and the sinus tract leading into the middle ear along the posterior canal wall discovered. There was no fistula into the antrum but only bone denuded of periosteum, however,

for fear the antrum might contain pus it was opened but found free. The infiltrating organism was a staphylococcus. Blood culture later showed the same organism. Mercurochrome was being used at this time fairly extensively, and was given in this case without any favorable results. It was repeated and preparation made the third time to give it when the patient died five days after entering the hospital. The blood culture was still positive.

Case 11. The patient was admitted to the hospital with a discharging ear of two weeks duration. The day before admittance the patient's temperature had risen to 104°, after it had been running along near normal since the ear opened itself. Examination showed a profuse discharge from the ear, some tenderness on pressure over the mastoid antrum and tip, and bulging of the drum. The leukocyte count was 12,000, and the physical examination was otherwise negative. A free paracentasis was done in the hope that better drainage would relieve the temperature, but this was not the case. She continued with high fever for the next four days; no chills were present. A blood culture was positive for streptococcus hemolyticus. On the fifth day a simple mastoidectomy was done and there was found a moderate destruction of the matsoid cells. The cells were cleaned thoroughly without exposing the sinus, however because of the possibility of periphlebitis of the sinus it was decided to fully expose the sinus. There was apparently no involvement present, so other than the exposure nothing further was done to the lateral sinus. The patient was then given a blood transfusion and because the temperature did not go over 101° after that afternoon, no more were given, and she ran an uneventful convalescence and was discharged cured. It is possible in this case that the patient had a mild phlebitis sufficient for the organism to gain entrance into the blood stream, and that exposure of the sinus and freeing it from pressure of surrounding infected tissue permitted the inflammation to subside without formation of a thrombus. However, the appearance was against this.

Case 12. Francis, aged 6 years was taken, sick one week before admission to the hospital with a severe sore throat, culture from which showed the streptococcus mucosus capsulatus. Forty-eight hours later she developed an abscessed left ear which was excised with an escape of bloody serum, culture from which showed the same organism. During the first twenty-four hours she developed a rash similar to scarlet fever but which disappeared in forty-eight hours. The child's temperature was high from the beginning, and on the day before admittance she had a chill and fever of 106°. When seen early the next morning examination showed no trouble in heart, lungs, or kidneys. There was a moderate discharge from the left ear, good opening in the drum which was flat, and the middle ear was apparently draining well. There was no mastoid tenderness. The pharynx was red and injected. A blood examination showed a leukocyte count of 15,000. A blood cuture was made at the same time. That afternoon she had a severe chill and the temperature again went to 106°. That night she was mottled in appearance, bluish lips, ears and finger tips. The next morning the temperature was down to 101° but rose again to 106° in the evening. At this time the blood culture was again positive. There was no headache or pains anywhere. It was decided to do a simple mastoidectomy, in view of the blood findings I could not feel that there was serious involvement or destruction of the cells. This was done the following morning, and some destructions of the cells around the antrum found, and some small amount of pus. I would say only a mild mastoiditis was found. The sinus was not exposed anywhere as the destruction of the mastoid cells was not deep. A blood transfusion was then given. There was a rise of temperature that evening to 106° again, but the following morning it returned to normal and only arose to 103° during the day. The next day however, there was a chill and a rise of temperature to 106° and a second transfusion was given the next day. The second blood culture at this time was still positive, but only had about one-half the number of colonies that the previous one had shown. After the second transfusion the temperature never went above 102° and gradually returned to normal in three weeks. The blood culture was negative three days after the second transfusion. There was a metastatic abscess on the right wrist which was opened and drained. The lateral sinus was not exposed, opened or examined and the jugular not ligated. The child made a good recovery and was discharged cured.

In conclusion, I would like to say that, in spite of the statement that whenever a diagnosis of lateral sinus thrombosis is made based on a positive blood culture, chills and fever, the only treatment is operative and consists of ligation of the internal jugular and opening of the lateral sinus, there are cases in which it is utterly impossible to find out which sinus is thought to be causing the trouble, I believe it is only fair to the patient to give him a transfusion of blood before attempting operative procedure.

Second, there are a fairly large number of otitis cases giving a positive blood culture due to direct invasion of the blood stream without any involvement of the lateral sinus or surgical destruction of the mastoid. Blood transfusion is of the greatest value in these cases, and where proper laboratory tests have been performed as to type, hemolysis and cross agglutination, etc., is far safer than germicidal dyes which at best are dangerous, and far from giving brilliant results as previously stated.

I do not wish to give the impression in this paper that we are to neglect surgical intervention, but I do contend that it is often done without a most careful effort to determine the necessity. I wish to condemn the practice of ligating the internal jugular vein, without even examining the lateral sinus, on the strength of a positive blood culture, as is advocated by some and frequently done. I feel that at least we should examine and know we are dealing with a lateral sinus thrombosis before resorting to such a drastic procedure. Often exposing the sinus alone is sufficient to clear up a periphlebitis. Third, I wish to emphasize the fact that we cannot depend on a positive blood culture in making a diagnosis of lateral sinus thrombosis. We all know that many cases never gave a positive blood culture, and often not even a chill and particularly high fever, though there is a temperature of irregular type. Fourth, that every otitis media should be cultured at the earliest possible time, preferably at the time of incision of the drum. Whenever the organism is of the streptococcus group the patient should immediately be hospitalized, if possible, a complete blood examination should be made frequently and a blood culture taken whenever there is an irregularity of the temperature. Blood cultures are to my mind important and if taken early and frequently will show a much larger percentage of positive results than were previously found, and in many cases will prevent a major operation, that would be performed at a later date because of a suspected sinus thrombosis.

DISCUSSION.

Dr. Lippincott: I don't think that I can add anything that has to do with infection and blood transfusion. I don't think that in many cases any absolute good has been done by transfusion.

There are cases that it does not do any good no matter what you do, however I am always glad to practice transfusions before operations, and to hear the papers on the subject.

I have enjoyed these discussions.

THE EARLY TREATMENT OF STRABISMUS.*

H. L. ARNOLD, M. D.,

MERIDIAN, MISS.

There seems to be a prevalent idea among the laity, and to a large degree among the general medical profession, that the treatment of a cross-eyed child should not be started until the child is old enough to go to school. There also seems to be a very prevalent idea that an operation is the best treatment for squint. Little do they realize that, by the time the child has reached the age of five or six years, great and permanent damage has been done the crossed eye. It is true that in the older child an operation may straighten the eye, but it is then too late to restore the lost vision and fusion sense. When we consider that binocular vision is a result of the development of the fusion sense, and that the fusion sense is developed in the first year of life and is gradually strengthened up to the seventh or eighth year, so much so that the sight of one eye may be lost, yet no deviation of that eye will occur. As Claud Worth says: "When the fusion faculty is fairly well developed, nothing but an actual muscular paralysis can cause an eye to deviate, in which case the resulting diplopia is intolerable. Sometimes, however, owing to a congenital defect, the fusion faculty develops later than it should,

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or it develops very imperfectly, or it may never develop at all. Then, in this case, there is nothing but the motor co-ordinations to preserve the normal relative directions of the eyes, and anything which disturbs the balance of these co-ordinations will cause a permanent squint. Thus, the essential cause of squint is a defect of the fusion faculty."

This disturbance of the fusion faculty may result from a number of causes, infectious diseases, fright or shocks to the nervous system, hereditary, anatomic anomalies, and the one most commonly found, errors of refraction. In order to prevent the confusion of seeing double, nature gradually but surely suppresses the vision of the weaker eye, so that by the time a child reaches the age of 5 or 6 years, the sight of that eye is permanently impaired.

Therefore, in the treatment of this condition, it is most important to get the child early. This can be done only by educating the family doctor and the public not to wait until the child is ready for school. We must get them to bring the child for examination as soon as the condition is discovered. We should take time and patience to examine these cases thoroughly, and the parents should be impressed that they, too, must take time and patience to carry out all directions given them. Too often the parents lose hope if they do not see immediate results. Parents often have a strange prejudice against such a young child wearing glasses. Frequently some kind friend will tell them that the child's eyes are being ruined by wearing glasses which may be strong enough for the grandmother to read through. I mention these things because unless you get the confidence and co-operation of the parents, you doomed to failure before you start.

Of course, any necessary attention to the general condition of the child should be attended to, for a weak or sickly child does not respond well to treatment.

The eyes should be examined and most carefully refracted under atropin. In the very young, this sometimes necessitates several attempts before a satisfactory examination is made. Of course, in eyes where there is an opacity in the media or other defects, it may not be possible to give much relief, but fortunately, most of these cases are due to errors of refraction. Rather full correction should be ordered, but overcorrection causes a blurred image and tends to weaken the development of the fusion sense. The age at which glasses can be started is usually stated in the textbooks as three, but in many cases they can and should be ordered at the age of two years or younger. I have in several cases successfully put glasses on children younger than the age of two years. The atropin should be continued for several days after the glasses are placed on the child, and then stopped. The child should be kept under observation. If the eyes become straight and remain so, good and well, if not, then the fixing eye should be kept under the influence of atropin for a period of time, or, perhaps, better still, the fixing eye should be kept bandaged for several hours each day, so as to force the use of the squinting eye. This treatment should be kept up for at least one or two years. If this fails, the use of bifocal glasses may be tried.

When treatment is started in a child of 2 or 3 years of age, in most cases the vision of the squinting eye will become normal and the eyes will be straight, but if treatment is delayed until the child is 6 years or older, the vision will never become normal.

Operative treatment has not been mentioned because these cases should be treated before an operation is advised, and if treatment is started early enough, in most cases, operative treatment will not be necessary.

DISCUSSION.

Dr. Wilkins: We thank Dr. Arnold for his paper.

I am glad to tell of the privilege I had of getting several youngsters at a pretty early age, and after treating the eyes for a time to see the gratitude of the parents. I think it is best to get them to see the necessity of the child wearing glasses.

I advocate a long dilatation with atropin. Sometimes I use homatropin as it doesn't take much longer than atropin.

I usually get the little fellows from 21/2 to 3 or 21/2 to 4 to come to my office from 15 to 30 minutes, say about twelve times. I try to get the co-operation of the child and then the parents.

I had one little fellow come to my office about six months. I dilated the pupils two or three time with atropin. I couldn't make friends with him. I had him come in every two or three weeks. They lived 15 or 20 miles away and usually made the trip twice a month. At last I made friends with him. I gave him a nickel or ten cents, and finally won his confidence.

At one time I had for patients two delightfully cute little girls who were afflicted by deformity due to strabismus. Otherwise they were beautiful, and members of prominent families. Soon other people noticed them wearing glasses, and therefore served as an influence to other children in need of glasses.

Sometime after treatment and wearing glasses the eyes will straighten, and the glasses may be left off. Then again the patient may continue to have to wear glasses.

I have a nurse in my office 35 years of age who has been wearing glasses 20 years. If her glasses are removed for a few minutes the right eye crosses over, and we get a permanent fixation of parallel line.

Dr. Travis: I want to say that I never attempt to fit glasses without atropin. I generally put the patient under atropin treatment for three, four, or six times.

A child will not be patient, and for that reaosn I have him come in every day until I can fit him with glasses. I watch the patient, and sometimes get perfect results.

I think it is generally advisable for the patient to continue to wear glasses.

Dr. Arnold: The age is the one thing I want to stress.

I formerly never attempted to fit a child with glasses before the age of three. I have tried some younger. I don't hesitate to put glasses on a child as soon as he can walk and handle himself, say about three or four years of age; sometimes two or three years of age. I think that in these cases the best thing to use is homatropin or atropin, however for most cases I prefer atropin.

To fit with glasses is the only thing to do.

As to how long a patient is to wear glasses, I generally tell him always. In fact, I think it is a mistake in almost every case for a patient to go without glasses except temporarily. I don't encourage them to go without them. I have seen patients who have worn glasses take them off, and the minute they are removed the eyes turn in.

CARDIORRHAPHY:
WITH REPORT OF CASE OF VENTRICULAR PUNCTURE.

J. Q. GRAVES, M. D.,

MONROE, LA.

Early medical literature contained many interesting facts, which read like thrilling fiction pertaining to "Heart Wounds." For Riolanus (1649) less than three hundred years ago opens his brilliant chapter on the heart with these words: "The heart is the chief and most noble organ in the body. It is the source of that life-giving nectar by the influx of which the vitality of each part of the body is renewed and cherished. The organ which is the first to be born and the last to die, and through which all other parts of the body live and move and have their being."

Other authors of this period used much the same language in describing the heart. Ambrose Pare in 1691 said: "The heart is the chief mansion of the soul, the organ of the vital faculty, the beginning of life, the fountain of the vital spirits, and so consequently the continual nourishment of the vital heat, the first to live and the last to die."

Paul Barbette, of Amsterdam, a contemporary of Ambrose Pare, in 1687, was of the opinion that "Wounds of the heart are always mortal and those that penetrate into the left ventricle kill suddenly. Those

so wounded live about 6, 12 or 20 hours, although there are examples produced to the contrary. A wound in the right ventricle permits the patient to live longer.

In 1604 Cabriolanus mentions a case in which he found a scar, and another in which he found an unhealed wound in the heart. He agrees with Fernelius that the heart can suffer a solution of continuity without death ensuing; and, he adds, lest anyone should think that these heart lesions were the cause of death, that both these persons were hanged.

While Tourby, in 1642, did an autopsy on a man who four years previously, had had a sword-thrust in the chest which caused a wound of the heart near the apex; the evidence of which was a cicatrix that could be demonstrated to all present.

In the succeeding centuries there is little to note till the time of Bonetus, and Morgagni. They established two facts: (1) That wounds of the heart were not necessarily immediately fatal; (2) that a sudden effusion of blood into the pericardium arrested the heart's action. In Bonetus' writings he relates the case of a young man, aged twenty-four, who bravely sustained an attack of seven others, but was at length wounded by a sword-thrust. He survived five days. There was a wound of the left lung and of the right ventricle of the heart. With this Morgagni compares two cases of heart wound. In one there was a free opening in the pericardium, and the blood escaped freely externally. This patient lived eight days. In the other the blood was retained in the pericardium and the patient died in a few minutes. He points out that the second patient did not die from hemorrhage, but from pressure on the heart. Thus, a hemorrhage within the pericardium is much more quickly fatal than a hemorrhage in most other places, even though it be far less in amount.

Ambrose Pare also says when he was in Turin he saw a certain gentleman who in a duel received a wound under his left breast which pierced into the substance of the heart; yet, for all that, he struck some blows afterwards, and followed his flying enemy some two hundred paces, when he fell dead upon the ground. Having opened the body he found a wound in the substance of the heart so large as would contain's one's finger.

Literature recites that a pointed piece of stick was found in a pig's heart. The swineherd stated that more than six months previously he had prodded the unruly animal with the stick he used for driving the pigs. A boy in 1834 lived five weeks and two days after a gun powder explosion, which blew a piece of wood into his chest. At the post mortem a piece of wood three inches long and as thick as a cedar pencil was found in the right ventricle.

In 1825 a man aged fifty years, died in a hospital, who nine years previously was wounded by a knife wound of the left chest. The edges of the pericardial wound had become adherent to the chest wall and a firm fibrous cicatrix was found going through the whole thickness of the right ventricle in a line corresponding to the wound of the pericardium.

In 1827 a medical student in Paris was stabbed in the left chest. A jet of blood, as large as a pea, and air came from the wound. The flow of blood increased when the patient groaned. He recovered in twenty-eight days. The only treatment instituted was by bleeding. The blood pressure was the index for such procedure.

It may be concluded, then, that in wounds of the heart a free external hemorrhage is less dangerous than a sudden filling of the pericardium with blood. Wounds of the heart, too, under some circumstances do not allow the continued escape of blood. They close and heal as do certain wounds of the arteries.

Mr. Mansell Moullin showed a case at the Clinical Society in 1897 in a man who

had received a severe blow from the point of an elbow on the third left costal space in a football game. Twenty-five days later, the pericardium was opened in the left fifth costal space, and a drainage tube was inserted. In three hours six pints of thin dark fluid escaped through the drainage tube. This case was one of rupture of the heart without external wound, and slow accumulation of blood in the pericardial activity occurred. In the same volume of the Clinical Society's transactions a case of punctured wound of the right ventricle is narrated by Mr. W. G. Spencer. There was considerable external hemorrhage on the eighth and seventeenth days. Death occurred on the seventy-ninth day. There was a healed wound of the wall of the right ventricle, which was adherent to the scar in the pericardium.

Statistics compiled by Dr. Pool of New York, who has gone into the subject extensively, shows that prior to the Great War, in August, 1914, there were more than seventy-five operations on the heart, with the mortality of these operations slowly decreasing since 1896. The death rate before the war may be put at about 45 per cent. Adding the cases during the great war, which number over sixty, there is a certain total of at least three hundred eighty operations on the heart. Since the performance of Farina's operation there is no doubt, however, that there have been many more than four hundred operations on the heart to the present date, with causes ranging from a needle puncture to a bullet wound. Many cases, especially the fatal ones, have not yet been published. Of fifty-eight war cases of which he noted, forty-four of the patients recovered, and fourteen died—a wonderful record. The French surgeons seem to have been more successful in these heart operations..

Hartman reports a case where a soldier, wounded at Bapaumme, August 27, 1914, and taken prisoner by the Germans, showed very slight symptoms at first. In February 1915, there was pain, palpitation and dyspnea. In August it became much worse, with frequent heart attacks with sensation of impending death. Roentgen-ray examination showed a bullet in the heart. He was then sent to Switzerland where he stayed till February, 1917. After being in various hospitals he reached Paris, April 7, 1917, where an operation was performed for its removal. A thoraplasty was done, the pleura opened, the projectile could be felt through the pericardium. The ball being located in the wall of the right ventricle was removed and recovery was satisfactory.

Dr. Jenckel also reports a case where a bullet was embedded in the posterior wall of the right ventricle. An operation was done six months after the injury, but had to be abandoned because the heart could not be brought forward enough to expose the posterior surface of the ventricle; the patient recovered. After waiting six months he operated again, and this time succeeded in removing the bullet, and the man made a good recovery.

October 17, 1914, Beaussenot successfully removed a bullet from the right ventricle of a French soldier's heart, which was inflicted during the war with the Central Powers. During the same war there have been several cases in which a bullet has been expelled from the ventricle of the heart, and the patients made satisfactory recoveries.

CASE REPORT.

Surgery of this important and vital organ of the body stimulates me to recite the following story with the unusual operation and its favorable results:

W. B., a colored male, 27 years of age, a laborer by occupation, was brought into the hospital October 2, 1928, and immediately transferred to the operating room. A hurried examination revealed a stab wound in the left chest over the third rib about three inches from the mid-clavicular line; it was a transverse wound about one inch in length, which had been inflicted about one hour previous to his entering the hospital. According to his version of the wound he and his estranged spouse were en-

gaged in a physical combat, when she drew from her apron pocket a knife with a blade about six inches in length, which was about three-fourths of an inch wide at the base, coming to a sharp point, and being slightly curved backward. They had been fighting for some time, he having inflicted many bruises upon the woman, when she, with rapid speed, drew the knife and thrust the blade into the left chest, producing the above mentioned wound.

Physical Examination: A healthy, well nourished, well developed negro man, lay upon the table with apparent comfort and ease.

Chest: Well developed with good action over both lungs. Diaphragmatic action was good.

The Thorax: Both heart sounds were heard, they were regular, but were faint, giving the impression of a far distant sound. Percussion and palpation showed a greater area of dullness of the heart. Respiration was slightly increased. There was no pathology of the lung or pleura noted by physical examination other than a transverse stab wound in the upper left chest over the third rib, two inches from the midclavicular line. The blood pressure was 70 over 40. Pulse rate 81, was very weak and soft, though regular and steady.

Subsequent History: Repeated examination revealed a peculiar type of pulse as found above, which were slow, soft, regular and with very little volume. Watching the patient it was several minutes before I could definitely determine whether I was dealing with a heart wound, or not. He did not show any evidence of marked hemorrhage. The mucus membranes of the lips were pink, no air hunger and no acceleration of the pulse, no shock, coma or languor, only a heavy feeling in his left chest, resembling that of a weight.

After due consideration, and contrary to the teaching of good surgery, I sterilized the area around the wound and then, a small sterile probe was passed into the wound until it came in close contact with the rib. I could detect that the continuity of the rib had been opened and that a small amount of blood was brought up into the field, with each ventricular contraction. There was still doubt in my mind as to whether the knife had passed through the rib to the heart muscle itself, or, whether a small artery, possibly an intercostal branch had been completelv or partially severed giving rise to this character of hemorrhage. Forty minutes had now elapsed since I had begun my investigation. His pulse though not accelera'ed, was somewhat weaker, and his blood pres: :e was somewhat lower. I was then forced to make a decision, one which I hoped would result for the best interest of the patient, and that was to enter the thoracic cavity in the exploratory manner to determine if the heart muscle had been severed.

Operation: A longitudinal incision about eight inches in length over the costosternal articulation was made. The third, fourth and fifth cartilages were severed, the flap was pushed back and with the rib shears the third, fourth and fifth ribs were also separated two inches to the outer side of the costo-cartilage junction. As the flap was pushed back it was found that the knife had passed longitudinally through the center of the rib, into the thoracic cavity. The thoracic window was then turned back, the pleura pushed to the left side, the pericardial sac was exposed. There was immediate collapse of the lung. An incision into the sac was at once detected, the sac being greatly distended. That the sharp point of the knife had not only passed through the pericardium, but, had penetrated the heart muscle itself, ir the outer lower hemisphere of the left ventricle was evident. The sac was opened and blood clots were removed. With each ventricular contraction there was a distinct gush of blood. With my left I entered the pericardial sac, lifting the heart up into clear view in the operative field, with my thumb placed over the transverse incised wound of the left ventricle of the heart, which was about one-half inch in length, in order to control the hemorrhage by digital pressure, the process of closure was now begun. With No. 6 linen I placed six interrupted sutures in the heart muscle, while a No. 3, forty day, chromic catgut reinforced the underlying linen sutures, making a perfect closure. With the heart still in my hand I waited several moments to be sure that the sutures were dependable and secure enough to justify me to continue with the operation. My attention was then directed to the closing of the pericardial sac, which was done with interrupted linen, leaving a small cigarette drain. The ends of the ribs were brought together and affixed with double No. 3 chromic, as was also the ends of the cartilages. The skin was closed with interrupted silk worm.

Post Operative History: The patient was then transferred to the negro ward, and placed in bed, with directions to be kept in recumbent position, and to administer morphin sulphate as needed for cough, pain or restlessness. All liquids were to be prohibited by mouth for three days. The water balance was controlled by the intravenous administrations of salines and glucose. The volume of the pulse soon returned to normal, while the blood pressure was elevated within a few hours. He made an uneventful recovery, and was discharged from the hospital nineteen days later, October 21, 1928, as cured and since has

returned to his usual duties. Expansion of the collapsed lung was promited by causing the patient to blow a horn.

Analysis of his chart shows the highest temperature reached was 102°, lowest 97°, with a mean temperature of 99.5°. Highest pulse 120, lowest 70, a mean pulse of 98. The highest total white count was 11,250, while the lowest was 7000.

DISCUSSON.

The thought arising in your mind is why didn't this man die since the left ventricular cavity had been entered by the blade of the knife. An explanation which seems most plausible and logical is that the knife passed through the center of the rib, parallel to its upper and lower borders. The heavy bony rib substance had a tendency to guide the knife in a straight line, thereby producing a punctured wound rather than an incised wound, as would have been experienced had the blade been permitted to complete the arc of the circle. The blood immediately filled the pericardial sac, pressing it against the chest wall, and thereby producing an automatic, anatomic and mechanical closure. Had surgical interference been deferred much longer death would have come from compression of the heart, as was shown by Morgagni in the report of his two interesting and instructive cases, which were shown to illustrate the comparative cause of death.

Contrary to the prevailing ideas, it is interesting to note that the heart, the organ as a whole, can be handled and manipulated with as much ease and freedom from injury as any other organ in the body, which was clearly demonstrated at this operation. The same aseptic care must be given the heart as would be given any organ of the abdomen, as death is caused by infection or hemorrhage.

Though now the field for heart surgery is limited and highly specialized, yet, modern science has revolutionized this advancing art, making it compare favorably with nature herself in the process of restoration and repair of the body, therefore, unfolding greater possibilities in this line of endeavor, which will be another avenue opened up for the conservation of human life.

THE BICORNATE UTERUS*

F. M. LETT M. D.,

LECOMPTE, LA.

It is not amiss that we should at times depart from the rather routine consideration of those conditions which are pathological, pathological from an acquired origin —infections if you will; and devote ourselves to the consideration of those conditions which are anomolous, "defects of nature," so to speak. While these are rare (and we might add, "nature makes but few mistakes") they make a most interesting volume. The malformations of the uterus makes one of the most interesting chapters in gynecology; and while its most serious, and truly vital, interest concerns the obstetritian we find it not without food for though to us as gynecologists.

The reasons for this anomoly briefly stated—referring to our embryology—lies in the development of the ducts of Müller. If there is no abnormal development we find normal Fallopian tubes, a normal uterus, a normally developed vagina, etc. The nonfusion of the upper portion forms the Fallopian tubes; the fusion of the middle portion forms the uterus and the fusion of the lower the vaginal tract, etc. Then arrested embryonic development or unequal development in the two sides in any of these areas produces one or more of these malformations; and only those malformations as pertain to this middle portion, that portion forming the uterus, are now considered.

As for a classification of these congenital defects—there are many, several observers attempting one—that given by Graves is the clearest, which we quote:

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I. Uterus didelphys or uterus duplex separatus
(Complete separation of the two halves of the uterus with double vagina.)

II. Uterus duplex bicornis cum vagina duplici
(Separation of the two bodies, but the two cervices are fused, the vagina double.)

III. Uterus duplex bicornis
(Like the preceding except that there is a single vagina.)

IV. Uterus bicornis unicollis
(Body of the uterus is double but cervix fused into one, the bodies may not be widely separated but together so that fundus has a saddle shape.)

V. Uterus septus duplex
(External form of uterus is entirely normal but entire canal divided by septum reaching from fundus to external os.)

VI. Uterus subseptus uniforis
(A partial septum.)

VII. Uterus biforis
(Cervix completely divided.)

VIII. Uterus unicornis
(Complete absence of one-half of the uterus.)

We meet this anomolous condition unexpectedly, practically in every instance; particularly so in the non-gravid uterus. Without any particularly diagnostic signs from history, and usually on examination mistaking our findings for the more common conditions as fibroids or other more or less commonly found neoplasms. The obstetritian, it seems, discovers more of these malformations, particularly the uterus didelphus, than the gynecologist. In those cases where we have uterus didelphus or uterus duplex bicornis the factor of error in diagnosis is small, particularly so if vaginal examination is made with any degree of accuracy, for the cervix reveals the condition. In each case encountered by the writer the preoperative diagnosis was not confirmed by the post-operative. The rarety of the anomoly and the similarity of the findings with the usually found conditions only lead to more or less confusion, when encountered. So taken unaware we, while making our inspection of the pelvis, hasten to reach a conclusion as to just what would be the proper course to pursue. In as much as practically no two conditions are alike we have no defined rule fixing our procedure in this emergency. We must not forget that sterility is not the rule in this condition; to the contrary they may be said to be prolific, and several observers make the statement that not only repeated pregnancies is the rule but often multiple pregnancies, and more than once with the same mother and viable children. It is recognized and reported that abortion, miscarriage (truly dangerous incidents) are not infrequent and, in fact, they are prone to same. It is, by the way, interesting to note that in my limited experience—bearing out the statement by Dannenreuther to the effect—that anomolies of the vagina carry sterility; and likewise confirming statement to the effect that neoplasms are the rule. In the so called infantile uterus, only an anomolous uterus, so frequently is there associated neoplasms —fibroids, cysts, etc.

Diagnostically this condition presents one extremely important feature and one that cannot be overlooked. If the diagnosis of the existent condition can be made it is possible for us to spare ourselves at sometime no little grief. It has been definitely shown that in these malformations of the uterus there occurs cases where there is an absence of the right kidney and a concomitant anomolous location of the single ureter. If the diagnosis is not made prior to operation more than ordinary care must be exercised. In reference to the possible absence of the right kidney the statement has been made, and by whom I do not recall, that up to the time this was made, possibly two years ago, no case had been found where the left kidney was wanting. Each year we find our profession forging ahead with strides that are marvelous,—something new almost daily advanced for the benefit of those seeking our

aid and each new advance entailing upon us more and more labor but fortunately we have within our reach those agencies which will safeguard us and our patient from this dangtr. These are our confreres in their respective specialties—the cystoscopist and radiologist. Infection is as likely in this condition as in the normally developed uterus, but there seems to be a predisposition for it to be unilateral. The infection of whatever type, specific or nonspecific, invading one cornu or one compartment seems to limit itself to that segment and adjacent adnexa. Haematometra are not infrequent and unilateral and is designated as one of the very few and indefinite indications that this malformation may exist. Just here the thought is suggested that in dealing surgically with these conditions that the healthy side be not disturbed.

Each case must necessarily be a law unto itself—no definite preconceived plan of action exists to apply to these cases, though conservatism must be advised. The hasty ruthless resort to surgical interference for these anomolies, as anomolies alone, must be condemned. Far better close some abdomens with only removal of the appendix when the condition is found than do that which may not be indicated purely for the sake of being able to say that something was done. Myomectomy will prove many times preferable to hysterectomy though probably the latter may have to be done subsequently. Utriculoplasty is possible many times in these cases and might be preferable to hysterectomy. After all in many instances we should not be so much practitioners of economy as practitioners of conservative surgery. While the writer's experience comparatively speaking is very limited in the handling of this condition one case in question ended disastrously fifteen months after operation by the patient becoming pregnant and was returned to the sanitarium moribund and too late for any interference—autopsy was not obtained.

CASE REPORT.

Mrs. E. M., aged 18 years, married three years. Family history was entirely negative. Previous History: She had had the common illnesses of infancy and childhood. There was an indefinite history of a fever of two weeks duration when a child of about ten years of age. Menstrual History: Menses appeared at age of fourteen, regular and duration five days. She had had severe dysmenorrhoea since the onset. No leukorrhoea prior to marriage and for the past few months profuse. She lived away from her husband for some time, about one year, and her conduct during that time was questionable. For some time had been troubled with a black discharge after the regular flow, lasting for a few days. Menses never excessive. Present Illness: For the past five years had been having pain and discomfort in the lower right abdomen. This condition had gradually become more annoying. She could not say whether menses made it more severe. There was no nausea, no vomiting, no digestive disturbance. No discomfort at any time in the left lower abdomen. No urinary frequency, no dysuria. Had been having temperature but none for some weeks. Physical Examination: Blood pressure, S, 114; D, 80; T, 98.4°; P, 80. Mouth, etc., negative. Gland Sys., no adenopathy. Chest: Heart and lungs negative. Abdomen: Tenderness over the lower right abdomen; on deep pressure there was a small mass in the right iliac fossa, seemed not to be fixed. Gyn. Exam.: Uterus apparently larger than normal, did not seem to be so freely movable; a mass to the right of uterus, seemed to be fixed to the uterus. Cervical os showed only a slight mucoid discharge. No gram neg. diplococci found. Urine Exam: Negative. Preoperative Diagnosis: Cystic right ovary and fibroid of the uterus, interligamentous.

On opening abdomen a V-shaped mass was found, the part extending to the right was many times larger than the portion extending towards the left, having the consistensy of a fibroid—to the right a tube and at the fimbriated extremity an ovary, cystic, the size of a small orange. To the left, low in the pelvis, the opposite part of the V to this just described and apparently normal in its consistency though small, a mass identical with a uterus. The accompanying tube was very small and short, only one and one-half inches long, and the ovary was the size of a large peanut. The two cornu had a common cervix. There was no induration present in this left half, no evidence of any infection. The right tube and ovary were removed and the right cornu removed by utriculoplasty. The interior of the right cornu showing haematometra. The laboratory report was endometritis, metritis, salpingitis chronic,

cystic ovary. Her recovery was uneventful, leaving the sanitarium on February 14—operated February 2, 1926. On the morning of July 5, 1927, was returned to the sanitarium practically moribund, expiring a few hours later. She was admitted with the history of being at term and was by examination practically nine months pregnant but the pains she was having were indefinite labor pains. The condition presented was more typical of an intestinal obstruction. From the time she became pregnant until the discomfort began she had not been attended by a physician. Autopsy was not obtained and the cause of her death not definitely known.

In this case the points of interest were that we had a bicornate uterus with a common cervix (uterus bicornis unicollis). The infection was unilateral and haemotomatra was present. She was not sterile but became pregnant in the remaining cornu with a rudimentary ovary and exceedingly small tube. Under the conditions of her death I regret not having removed this rudimentary tube.

CONCLUSIONS.

1. A condition evidently not so rare as is rarely recognized.

2. The embryology particularly as related to the congenital absence of the right kidney in these malformations is indefinite—the conditions are probably interrelated.

3. The diagnosis difficult owing to the fact that no outstanding well defined symptoms indicate the presence of the condition. When in doubt resort to roentgen-ray with lipiodol.

4. The condition not incompatable with general good health—and the normal sexual life. Usually discovered accidentally.

5. When hysterectomy resorted to be mindful of anomously placed ureter.

6. Conservatism is urged when handled surgically.

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THE OBSTETRICAL PATIENT.*

CARL HENRY DAVIS, M. D.,

MILWAUKEE, WIS.

Those of us who "tuned-in" on the radio dedication of the Cascade tunnel of the Great Northern Railroad were thrilled once more at the accuracy of modern engineering. The civil engineers who directed this great bore worked with instruments and methods which are so exact that the lines and grades from the opposite sides of a mountain range, eight miles through, varied only a few inches. The miracle of the modern telephone and radio made it possible for speakers and artists thousands of miles apart to take part in this dedication, while we sat by our fireside hearing every word and sound with a distinctness formerly impossible in an auditorium of moderate size.

Tonight I approach the varied problems of the obstetrical patient with deep regret that these cannot be considered with the mathematical exactness of a railroad engineer. While the development of scientific methods in the practice of medicine have been of great value in the study of disease, the physician is confronted with a variety of unknown quantities which defy the ingenuity of those who think in terms of mathematical formulae.

The development of the preventive idea in medicine led physicians who were interested in obstetrics to study more carefully the varied complications of pregnancy and labor with the hope of lessening the risk to mother and foetus. Prenatal care, as the management of pregnancy is now called, is probably the most important contribution to obstetrics of the past quarter century.

The objective of prenatal care has been stated by Williams as: "Such supervision of the pregnant woman as will enable her to go through pregnancy safely, to bring

*Read before the Orleans Parish Medical Society, January 28, 1929.

forth a normal living child with minimum danger, and to be discharged in such good physical condition as to be able to suckle it for at least the first months of its life." Ballantyne has well said: "We can only reach the unborn infant through the mother who carries him, and so the prenatal life of the child and the life of the woman in pregnancy are closely bound together and depend one upon the other."

VALUE OF EARLY EXAMINATION.

That the fundamental aim of pregnancy should be to secure a live child which will have a reasonable chance of reaching adult life is axiomatic. Yet, at present, this ideal is not reached in a very large number of conceptions.

Spontaneous abortions frequently occur as the result of some physical condition such as a retroflexed uterus, an unhealthy or over-strenuous occupation, improper hygiene, a severe toxemia of early pregnancy, or some infectious process. A carefully taken history, laboratory and physical examination early in pregnancy frequently will lead to the discovery and correction of unfavorable conditions with a reduction in the number of abortions.

The early recognition of certain diseased conditions such as tuberculosis, heart disease, nephritis and syphilis is of great importance. Infections of the birth canal with bacteria, parasites, or fungi, should be eliminated.

The presence of maternal conditions which may cause dystocia should be detected early in pregnancy. These include contracted or deformed pelves, tumors and displaced organs.

NAUSEA AND VOMITING.

More than half of the women seen in private practice suffer more or less from nausea and vomiting of pregnancy. By careful management the vomiting is usually stopped and the nausea reduced. Dry food in moderate amounts at frequent intervals is usually of considerable value. Liquids should not be given within one-half hour before food or one and one-half hours after. The smell of cooking is a common source of trouble. Hot drinks or charged water may be retained when the patient cannot use plain water. Effervesing triple bromide is of value in lessening the nervous symptoms. Moderately severe cases are usually controlled by resting the stomach and administering retention enemata which contain fairly large doses of bromide. Nothing should be given by mouth for twenty-four hours or until vomiting stops. Thereafter dry type of diet may be given in small amounts every three hours. Retention enemata with smaller doses of bromide should be continued until a sufficient amount of fluid is taken by mouth. The severe or neglected cases with rapid pulse, dehydration and acidosis require intravenous glucose in rather large amounts. Our results have been more satisfactory when insulin is used with the glucose.

The Columbia Hospital technic is as follows:

Patients with severe vomiting of pregnancy are given intravenously 1000 c.c. of 10 per cent glucose solution to which 50 units of insulin are added in the reservoir of the infusion apparatus. This gives a proportion of 1 unit of insulin to 2 grams of glucose. Formerly, a proportion of 1 unit of insulin to 3 grams of glucose was used but we get quicker and more satisfactory results with the larger amount of insulin. The solution should be administered slowly. From one to two hours time is taken to complete the intravenous injection; two hours is better than one. Great care must be exercised so that the solution enters the vein at body temperature. A cool solution may cause a chill. In the experience of the Staff at Columbia Hospital with well over 1000 intravenous injections of glucose in all types of hospital patients there has been no chill that could be attributed to the glucose. When a chill has occurred it has been caused by some other easily eliminated factor. If, as occa-

sionally happens, a patient with severe vomiting of pregnancy is found to have lowered blood chlorides, we mix 500 c.c. of 3 per cent sodium chloride with 500 c.c. of 10 per cent glucose. This reduces the amount of glucose by one-half, and the amount of insulin should be reduced proportionately. Sometimes one intravenous injection is sufficient. When a patient has been vomiting for a long time, is excessively dehydrated, and shows a marked ketosis and acidosis, repeated injections should be given, sometimes as often as every eight hours, until the desired therapeutic result is secured. We are certain that no harm has ever resulted to any patient from these procedures, and no obstetrical patient has had an insulin reaction.

Termination of pregnancy may be necessary if the patient continues with a rapid pulse and develops mental symptoms in spite of active medical treatment.

FOCAL INFECTION.

Many of us agree with Talbot that there is much evidence associating focal infection with the toxemias of pregnancy. Curtis and others have given laboratory proof of a relationship between infection and repeated abortions. There is no longer any doubt regarding infected teeth and tonsils being a medical hazard. I believe that one should eliminate chronic foci of infection whenever possible. All questionable teeth should be roentgen-rayed. After the first trimester with its nausea and vomiting has passed, teeth may be extracted or tonsils removed. It seems best to do this midway between calculated menstrual dates.

CONSTIPATION.

Many women have a tendency to constipation during pregnancy. I have found the use of liquid petrolatum and milk of magnesia very satisfactory for most patients. It is quite important to keep the bowels active since poor elimination predisposes to toxemia. Fruit is a natural laxative but many women cannot use it during the first trimester and it may cause heart burn at any time. Citrous fruits appear to have some advantage over those containing malic or tartaric acid.

EXERCISE AND REST

Exercise is required to keep the body in a healthy condition. The woman who does most or all of her housework usually needs no special exercise—rather, she must be warned against doing too much lifting, etc. Walking and riding in the fresh air is needed to rest her from the house. Massage and the less strenuous calisthenic exercises are beneficial.

Every pregnant woman should have frequent periods of rest so as to avoid fatigue. I usually instruct the patient to lead her normal life but to be moderate in everything. Just as she should stop eating before reaching her capacity, she should secure rest before she feels tired. Naturally she should be warned against the more strenuous forms of play as well as work.

ROUTINE TESTS.

The importance of urine tests in pregnancy has long been recognized. More recently it has been observed that it is equally important to follow the blood pressure. During the past ten years I have learned that routine weighing gives information of very great value. Frequently there will be a rapid increase in weight, due to retention of fluids in early toxemia, before there is a material change in blood pressure or albumin in the urine. A rapid increase in weight is a danger sign which should be investigated carefully in each case. If it is due to over-eating the diet should be regulated; if due to retained fluids, elimination should be increased by frequent doses of magnesium sulphate. The elimination of fluids may be increased also by putting the patient to bed for a few days.

I have obstetrical patients report at the office for tests of urine, blood pressure and weight twice each month during the earlier months; every ten days during the eighth month; and every week during the ninth month. They are also asked to report any unusual signs or symptoms by telephone.

SPECIAL MEDICATION.

Patients living in a goiter area should have small doses of iodine during the entire period of pregnancy and lactation. My studies of thyroid function and pregnancy indicate that the basal metabolic rate of pregnant women with normal thyroids will vary little, if any, when sufficient iodine is administered. It is my belief that the increased rates reported by several observers are due to an abnormal function of the gland rather than the growth of the foetus.

The calcium requirements of the rapidly growing foetus tend to drain this salt from the mother. This is usually evidenced by deterioration of the teeth, falling hair, and pain in the legs. If sufficient calcium cannot be obtained from milk and vegetables, calcium lactate or calcionates in some form should be prescribed. Small doses of parathyroid should aid calcium metabolism.

Other medication may be indicated for special conditions which develop during the course of pregnancy, or for chronic diseases which antedate the pregnancy.

EFFECTS OF OCCUPATION.

The entry of large numbers of women into industry requires that a careful study of industrial hazards be made. Thus far only a few reports have been published. However, the following, quoted from Thompson's book, "Occupational Diseases," gives much food for thought.

"Oliver found that married women who formerly were permitted to work in white lead production almost invariably miscarried, or bore stillborn infants, or infants that died at an early age of convulsions. It was this circumstance which attracted his attention to the hazards of lead work and led to the admirable investigations which in England have resulted in so much beneficial parliamentary control of the entire lead industry. In the stillborn infants Professor Bedson determined traces of lead in the kidneys and liver.

"Of 141 pregnant women who worked in lead factories in France it was found by Constantin Paul that 82 aborted, 4 gave rise to premature birth, 5 to stillborn infants. Of 50 infants born living at term, 35 died in two years. Thus only 15 children of 141 pregnant women lived beyond the third year."

"In the French Department of Labor Report on Industrial Poisons, made by M. Tardieu in 1905, among 1,000 pregnancies in lead workers, 609 terminated in abortion."

"Oliver found that of the children of paint-grinders, 40 per cent died of convulsions during the first year of life."

Deacon reported 101 pregnancies occurring among women employed in an English munition factory. As soon as pregnancy was determined the women were placed on light work and no bad results were observed. He believes that among this group of women, as a result of careful supervision, good food and regular exercise, their babies were stronger than usual for this class of women.

TUBERCULOSIS.

Tuberculosis is as much a contraindication to marriage as gonorrhea or syphilis. Similar rules should apply. Women, in particular, should not marry until some years after all signs of active tuberculosis have subsided. Bacon has estimated that 33 per cent of the tuberculous women who become pregnant will have died of tuberculosis within a year after delivery. Of the advanced cases who survive the pregnancy about 50 per cent will have died within a month after delivery. It is, therefore, evident that pregnancy is a most dangerous complication of tuberculosis.

Tuberculous women who contemplate marriage should be instructed regarding the dangers of a recurrence of pregnancy. They should be made to appreciate the necessity of receiving the maximum of rest, fresh air, good food, and expert medical supervision during the entire period of pregnancy, labor and the puerperium and for many months thereafter. In many in-

stances they should not attempt to nurse their babies. The married woman who develops tuberculosis should be advised against pregnancy until several years after all symptoms have subsided. Should she in spite of advice become pregnant, sanatorium care is advised as few women will receive the necessary rest, fresh air, and proper diet at home. An attempt should be made to bring her through the pregnancy with the minimum of danger. A healthy child may be expected, but it should be removed from the mother at birth. Nursing is rarely if ever advisable in these cases as it greatly reduces the chances of the mother and exposes the child to a practically certain contact infection. Therapeutic abortion should be reserved for consideration in the cases where with the absolute rest in bed in early pregnancy there is a continuation or gradual increase in the afternoon temperature. Pregnancy will kill most of these very active cases before viability. For such women the prognosis is bad regardless of the treatment.

HEART DISEASE.

Hamilton and Kellogg discussed cardiac disease and pregnancy at the Minneapolis meeting of the A. M. A. Their studies indicate that only about 1 per cent of all pregnant women have seriously injured hearts. Twenty per cent of the maternal deaths at the Boston Lying-In during a four-year period and 28 per cent of maternal deaths at the Faulkner Hospital, Boston, during a seven-year period were furnished by patients with seriously injured hearts. Mitral stenosis is the usual cause of trouble and a very high percentage of women with this condition will die shortly after the first or second pregnancy regardless of medical care. This complication is most often found in patients who have had chorea or rheumatism. Every obstetrician should be able to recognize an abnormal cardiac condition even though he may not make an accurate diagnosis. Responsibility for the heart should always be shared with a competent internist. May I urge that the management of cardiac women during pregnancy be along the lines outlined by Hamilton and Kellogg in their paper which was published December 22, 1928, in the J. A. M. A.

SYPHILIS.

Syphilis has long been recognized as one of the most important causes of intrauterine fetal death, but only within recent years have studies been made which give any suggestion of its frequency. Perhaps the most extensive American study has been made by Williams at Hopkins. In his clinic 2.48 per cent of whites and 16.25 per cent of blacks had a positive Wasserman reaction. His observation indicated that the presence of a positive Wassermann does not necessarily mean the birth of a syphilitic child; and that efficient treatment instituted by the middle of pregnancy gives excellent results so far as the child is concerned. Unfortunately, a negative Wassermann may not prove the absence of syphilis.

In private practice it is not practical or necessary to have a routine Wassermann on every woman, yet one should be obtained if the history is the least bit suspicious. Every stillbirth should be investigated for possible syphilitic lesions. I have had a strongly positive Wassermann reaction where there was no reason to suspect syphilis. Thorough treatment will enable such women to deliver healthy children. The children of syphilitic parents should of course be carefully observed during the first years of life and treatment instituted if any signs of the disease appear.

GONORRHOEA

Gonorrhoea is a serious complication of pregnancy and requires careful treatment. Not only is the inflammation of the acute stage more extensive and severe, but the acute process lasts much longer. The treatment is more difficult owing to the danger of causing an abortion. However, most of the gonorrheal infections with which we have had to contend during pregnancy are chronic. Frequently the condition is not diagnosed until the puerperium, and then

not until the baby's eyes are infected or the patient develops a salpingitis.

Formerly, opthalmia neonatorum occurred commonly in the babies of mothers infected with gonorrhoea. It was the great cause of blindness in children. Today, the routine use of the Crede silver treatment of the babies' eyes after birth has largely eliminated these birth infections. However, there is still danger of the baby becoming infected subsequently unless the infected mother has been carefully instructed regarding cleanliness and personal hygiene.

It is important that all of these cases be detected and treated. At present that is impossible, but whenever there is a suspicious history a single negative examination for the organism should not be considered sufficient proof of a cure. Repeated examinations are indicated. A perfect nursing technic will reduce the danger of crossed infection to the minimum. The lighting up of an acute gonorrhoea will usually be noted in the first days of the puerperium. This is favored by the presence of other organisms such as streptococci and staphylococci. A chronic gonorrhoea is the usual cause of the late puerperal fevers coming on during the second week of the puerperium, and rarely before the tenth day. These late infections frequently cause one child sterility as they so commonly result in pus tubes or an obliterative peritonitis. An acute gonorrhoea contracted during the puerperium runs a violent and destructive course.

ANEMIA OF PREGNANCY.

Routine blood examinations during pregnancy indicate that most expectant mothers have a moderate anemia. However, this apparently is not a real anemia in most instances as there is usually a rapid return to normal following delivery. Rarely one discovers a rather severe degree of anemia and active therapeutic measures may be indicated. Two of my patients who are relatively anemic at all times show alarming drops during pregnancy. One had a hemoglobin of 31 per cent Dare and a red count of 3,150,000 at the beginning of the ninth month. It was believed that this degree of anemia might prove injurious to the foetus and she was given 500 c.c. whole blood. Within a short time after the transfusion she went into labor and a few hours later delivered a 5 lb., 12 oz. baby girl. A blood count just after delivery confirmed the clinical observation that delivery had been accomplished with practically no loss of blood. Two weeks after delivery the hemoglobin was 56 per cent Dare and R. B. C. 4,450,000. It is interesting to note that both of these mothers are in blood group III, while their babies are in Group I. A comparison of blood counts at the end of pregnancy and at different times during the puerperium shows that there is a rapid increase in haemoglobin and erythrocytes following delivery. Since this is a constant and rather marked increase, it is believed that an increased blood volume may account for some of the apparent anemia of pregnancy.

NEPHRITIS AND NEPHRITIC TOXEMIA.

After syphilis, nephritis is the next greatest cause of intrauterine death during pregnancy. It is perhaps a more dangerous condition than syphilis in that it greatly increases the dangers to the mother as well as to the foetus. Chronic nephritis is a contra-indication to pregnancy, but since many women with nephritis become pregnant it is important that the kidney condition be discovered early and carefully followed throughout the pregnancy. In addition to the routine urine analyses kidney function tests will aid in determining the amount of kidney impairment. It must be remembered, however, that during pregnancy kidney function tests may be reduced even in the presence of normal kidneys. Blood pressure readings should be made at frequent intervals throughout the pregnancy as in these cases the variations upward in blood-pressure are of great significance.

Nephritic toxemia must be differentiated from the pre-eclamptic toxemia since the treatment is very different. With an im-

pending nephritic toxemia the pregnancy must be interrupted as the only means of securing a live child. Too long a delay also means so much destruction of kidney cells that the injury is permanent; the blood pressure continues very high, and the patient's life is materially shortened. On the other hand, pre-eclamptic toxemia yields to eliminative treatment, and following delivery the blood pressure soon returns to normal.

CONCLUSION.

Adequate prenatal care has made it possible to carry our patients through pregnancy with a minimum risk. During pregnancy we must plan for the delivery. Fortunately, most women have a relatively normal childbirth and can be given home care without undue risk. However, it is important to recognize possible complications early so that adequate arrangements may be made before the life of either mother or child has been endangered.

Gradually American women are learning that much of the present pain, mortality and invalidism is unnecessary when proper care may be had during pregnancy and labor. More skilled care in hospitals has reduced the risk of complicated labor, but the average woman does not, and at present cannot have the medical and hospital care that you and I wish for our wives. Thousands of American women are so far removed from a hospital that even difficult operative deliveries or other serious complications must be attempted in the home under the most unfavorable conditions.

The motion picture camera makes it possible to demonstrate all essential points in the various types of delivery. Tonight I will show you four reels of film which will illustrate the management of normal labor, various types of forceps, version and breech extraction, and finally the cervical type Cesarean section. The management of labor must be varied according to the needs of the individual patient and the obstetrician should be prepared to meet any possible emergency.

THE APPLICATION OF SCIENCE TO THE PRACTICE OF MEDICINE.—Medical practice even today, as conducted by the rank and file of the profession, is overloaded with empiricism and with methods that are maintained, especially in therapeutics, by the force of tradition, sometimes in the face of well-established facts that should bring something better in their place. Much of medical practice has been developed by gallant attempts on the part of physicians to meet the needs of suffering humanity by means that have been improvised where science has nothing to offer or where scientific facts and principles have not yet penetrated into the realm of practical medical knowledge.

The life of the successful physician is usually full of activity and in the majority of instances, especially away from the centers of medical progress, practice soon falls into a routine which is not often seriously disturbed by innovations. The younger men, fresh from the schools, may resist the plan of practice of their elders, and so bring down upon themselves and upon their schools disfavor. Many succumb to the force of example and precept of their older colleagues. They may soon learn to do without the scientific basis that had been given them more or less thoroughly. In order to prepare students of medicine to resist in after life the force of empiricism and tradition, scientific habits of mind must be firmly driven in. The result of an attempt to do this is often the cry from the profession that medical education has become "too scientific," whatever that may mean. A sympathetic attitude between the investigator in the medical sciences and those whose task it is to apply the results of research to the welfare of the individual patient is desirable and indeed essential. An antagonism, however, may exist on the part of the workers in science because of an apparent lack of appreciation by the physicians of the facts and methods of science, and on the part of the physicians because of a feeling that the results of scientific research are impractical and that scientific workers fail to appreciate the complex and varied problems constantly encountered by the medical practitioner.

This antagonism, however, is being rapidly replaced by mutual respect and collaboration whereever conditions have been set up that favor contact and coordination of clinicians and investigators. A group of workers is devolping that belong both to research and to practice, and members of this group are serving as the middle men, so to speak, between science and practice.

Robinson, G. Canby: Science, 69:460, 1929.

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CONTRACT PRACTICE.

Medical ethics are based on the oath of Hippocrates, which first appeared some 400 years before the birth of Christ and which has been followed by physicians for nearly 2,400 years. They are a moral creed which defines and governs the relationship between student and teacher, practitioner and patient, the profession and the public. Primarily the Hippocratic oath was intended to protect and safeguard the patient but in the evolution of the profession, medical ethics has broadened, and expanded into a tenet which guides the physician in all his professional contacts. The passage of time has rendered obsolete portions of the oath. No longer does the student consider the teacher "equally dear to me as my parents" nor would be deem it necessary "to share my substance with him." The surgeon does not consider as binding the injunction "not to cut persons laboring under the stone." On the other hand the basic and fundamental principles of the oath is still the star guiding the medical man—"follow that system of regimen which according to my ability and judgment I consider for the benefit of the patient."

Contract practice is defined in the Principles of Medical Ethics of the American Medical Association as follows:

"It is unprofessional for a phyiscian to dispose of his services under conditions that make it impossible to render adequate service to his patient or which interfere with reasonable competition among the physicians of a community. To do this is detrimental to the public and to the individual physician, and lowers the dignity of the profession."

The first section of this definition is specific and is a fundamental of the Hippocrates oath: take proper care of the patient. The second portion, referring to reasonable competition among physicians, has been added centuries after the original oath was promulgated. It is a section which is tinged with doubt and uncertainty. The whole question of contract practice is consequently undefined, indefinite and hazy. There is certainly nothing unethical in the employment of a physician to look after the health of the boys or girls in a boarding school, even if that physician be under contract. Many of the large clinics have under contract salaried internists and surgeons. Hospitals have contractural relations with their roentgenologists and pathologists. The Army doctor virtually contracts to take care of those patients in whatever locality he is ordered to take his post. Innumerable further examples of well recognized legitimate contract practice might be enumerated. Odious and unethical contract practice, on the other hand, is seen when the physician assumes the

charge of such large number of individuals that he is unable to care for them with any degree of exactitude, thoroughness, or reasonable scientific adequacy. He violates the Hippocratic oath because he is bound to neglect the sick man, often for reasons other than mere physical inability to render proper service.

Between the two extremes of undoubted ethical and unquestionable unethical conduct of contract practice lies the realm of doubt. Who is to judge of just what is proper or improper in contract medicine? There are no definite, distinct nor sharply marginated limits, drawn up by any body or group of physicians. The distinction would seem to be largely quantitative. It would appear that the enigma should be solved and the question could be elucidated only by those in intimate contract with a specific instance of presumed breach of the principles of medical ethics. Physicians in a given locality would know the conditions of practice in the community, they would be acquainted with the personality, reputation and previous record of the man who may or may not have violated the ethics of his profession, and they alone should judge, fairly and unpartially, if the individual is treating honestly his patients and acting squarely with his fellow practitioners, if he be doing to them as he would be done by.

NEW PRESIDENT OF THE MISSISSIPPI STATE MEDICAL ASSOCIATION.

Dr. Hugh Agnew Gamble was selected by the House of Delegates of the Mississippi State Medical Association to be the President of this organization for the coming year. Dr. Gamble is one of the best known and popular physicians in the western part of the State. Practically ever since he graduated from Tulane University in 1904 Dr. Gamble has practiced at Greenville, where he has achieved a splendid reputation as a most competent, careful surgeon, a skilled physician and a man of force and personality.

In addition to the prominent part he has played in the Mississippi State Medical Association, the new president is also an active member of the American Medical Association and the American College of Surgeons. He has always been interested in organized medicine and has more than borne his share of the burden and of the responsibilities that necessarily must arise in the various county and state and national medical organizations. The House of Delegates has done wisely in selecting such a splendid representative of the medical profession to represent the Mississippi physicians for the coming year.

THE TREATMENT OF VARICOSE VEINS.

Many years ago varicose veins were treated by the injection of blood coagulants. Naturally the effort failed, because it is a question not of coagulation of the blood but of producing reaction in the vein wall in order to induce coagulation in the venous canal. In 1911 sclerosing solutions were first used to produce thrombosis and obliteration of varicose veins. Since then a large number of observers have combined to show that this treatment is probably superior to surgery. The patients get well with little or no discomfort. The treatment is ambulatory and there is little expense connected with the injections.

Two considerations must be borne in mind when one discusses the treatment of varicose veins with sclerosing solutions: first, the safety of the method and second, the most satisfactory solution. That the method is safer than operative procedure is shown by the report of Kilbourne,* who has studied statistically 4,607 cases treated by operation in which the veins were excised. One patient in 250 died; whereas among 50,000 treated by injection the mortality rate was less than one in 4,000. Re-

*Kilbourne, Norman J.: Treatment of varicose veins of the leg. J. A. M. A., 92:1320, 1929.

currence after operation averages 30 per cent, but after injection only 6 per cent. The kinds of solution that has been used to inject in the vein include sodium bicarbonate, sodium salicylate, biniodid of mercury, quinin, glucose, sodium citrate, and sodium chloride. According to Melkon† very satisfactory results have been attained with sodium salicylate, metaphen, sodium chloride, and quinin hydrochloride with urethane. Logefeil and Dahlstrom‡ believe that the most satisfactory solution that can be used, is invert sugar (invertose). They claim that it is practically painless, non-toxic, and sloughing does not occur when the solution is accidentally injected outside the vein. Organization becomes complete while canalization and recurrence are rare. They have noted no general reaction.

The injection treatment seems to be definitely established. This common and distressing malady, varicose veins of the leg, seems to be handled well by any of the irritants mentioned above, although the report concerning the use of invertose would seem to point to a solution which can be used more favorably than any other.

†Melkon, E. A.: Treatment of varicose veins by the injection Method. New England J. Med., 200:690, 1929.

‡Logefeil, R. S., and Dahlstrom, A. W.: Sclerosing treatment of veins by chemical irritants. Am. J. Med. Sc., 177:690, 1929.

GROUP INSURANCE

Attention is called to the communication from Dr. P. T. Talbot, secretary-treasurer of the Louisiana State Medical Society, at the end of the section devoted to Louisiana news. The members of this organization should take advantage of the opportunity of securing insurance at a most satisfactory rate. They can only do this, however, if a majority of the membership will agree to the terms of the insurance company before June the fifteenth. This opportunity is afforded only to those doctors belonging to organized medicine. It represents a small by-product of co-operation in medicine, the most important features being so important and so beneficial to the physician that they need no enumeration.

Take advantage of this splendid opportunity; send in your acceptance at once; do not let inertia alone defeat the plan, a scheme of insurance which all thinking men agree is most advantageous to the insured group.

PROFESSIONAL ETIQUETTE.—If a professional man knows that certain forms of self-advertisement are illegitimate and contrary to the accepted traditions of his fellow-practitioners he can refrain from treading close to the border-line. Every profession has its members who sail close to the wind; their colleagues know them and form their own opinion. In this matter of advising on technical questions in journals the legal profession has probably had some increased demand or opportunity lately in view of the revolution in the law of conveyancing and real property which has sent back to school again many men of long experience and adequate instruction in the older law. The medical profession is here not quite in the same position as the legal. Advice upon health is a personal matter; the patient must be seen by the practitioner, whereas in many cases a barrister might be able to give an opinion —upon the interpretation of a clause, for instance, or upon the inference to be drawn from correspondence—without an interview. Moreover, questions of health are usually more urgent than questions of legal rights; a patient may be unwilling to wait a week for the printed reply. In other respects there is no great difference between the official standards of the Bar Council and the General Medical Council. In both professions there will be members, junior as well as senior, who are a law unto themselves. The standards cannot be upheld unless they are supported by the general approval of the rank and file. If they have that approval, they are entitled to the loyal obedience of all.—Editorial, Lancet (London) Jan. 19, 1929, p. 145.

HOSPITAL STAFF TRANSACTIONS

CHARITY HOSPITAL MEDICAL STAFF MEETING APRIL 16, 1929

The first group of cases discussed were presented by Dr. P. H. Jones. Three members of the same family, the father 62 years of age, the daughter 16 years of age, and the son 19 years of age were shown with the diagnosis of beri beri. These people were natives of the swamps of Louisiana and had been living chiefly on rice, with some litle green vegetables about once a week. They had had no meat nor milk in their diet. The father was a moss picker by occupation.

The first member of the family, a son, became ill about March 10 with weakness and inability to walk. He died at home on the eighteenth day. Then the father became ill, and following him, the son and daughter. These three were admitted to the hospital.

In each of these three cases the illness began with a sensation of numbness in the abdomen, then in the feet and legs. Gradually the feet began to swell, and dyspnea developed. Then following the inability to walk.

The father had at no time been as ill as the others. He was ambulatory when shown. He also had the least amount of cardiac involvement. The daughter showed slightly more cardiac involvement, with edema of the ankles, and the son had a very severe cardiac disturbance which almost proved fatal.

Electrocardiograms on all three were essentially negative. Feces examination showed the presence of hookworm ova in all three cases. The gastric analysis showed an achlorhydria in the son, while it was apparently normal in the other two. There were no other abnormal laboratory findings, except a slight anemia.

The neurological examination showed parasthesias over the lower extremities, with lost or diminished reflexes, and flaccid paralysis in the cases mentioned. The muscles were quite tender to pressure, and there was a definite delayed transmission of the painful impulse.

In the discussion which followed the case Dr. Cazenavette spoke of the marked neuritis. This neuritis was most marked in the boy, being more marked in the lower than the upper extremities, a rather typical finding. Dr. Lewis asked regarding the frequency of an achlorhydria in such cases, to which Dr. Jones replied that the only other cases he had any information on were three cases seen by Dr. Turner last year, one of which had an achlorhydria. In this condition he demonstrated a slight pigmentation on the hands of the boy which might have been regarded as a "pre pellagrous" condition. In reply to Dr. Love's question, Dr. Jones said that the cases had been treated with a pellagra diet plus concentrated vitamines in the form of vitavose.

Dr. S. J. Lewis then presented a case of syphilitic myelitis in a colored male negro. The onset of the condition had begun with weakness and numbness in the legs which had gradually progressed until his legs became stiff and he had difficulty in walking, using a stick to help himself.

Upon examination his heart was found to be slightly enlarged. There was a positive Babinski and ankle clonus on both sides. The patient walked with a spastic gait, using a stick. Urine examination and blood count were negative. The blood Wassermann was weakly positive. The spinal fluid showed 125 cells, chiefly small lymphocytes. Gloublin was + + and there was a luetic colloidal gold curve. The spinal fluid Wassermann was positive.

Dr. Unsworth commented upon the unusual fact that there had been no bladder nor rectal involvement. He advised against the use of arsenicals, and thought he would advise malaria inoculation. Dr. Cazenavette elicited the fact that the patient had had some slight bladder involvement from which he had recovered. Dr. Daspit said that he was certain that mercury by mouth had no value at all in such cases. He thought the proper therapeutic course would be to saturate the patient with mercury by rubs or injection, and then use the arsenicals gradually.

The third case was one of purpura hemorrahagica in a nine year old white male. The clinical record was presented by Dr. de la Houssaye, the case having been a fatal one.

Upon admission the child showed several ecchymotic spots over the body, a marked anemia, and a palpable liver. The condition is said to have developed following a circumcision at which there had been quite free hemorrhage. There had been no other external hemorrhage. He had had asthmatic attacks since 7 months of age.

The blood count showed 1,250,000 erythrocytes, 2800 leukocytes, 40 per cent hemaglobin, color index 1.6, platelet count 43,500. The coagulation time was 3.5 min., and the bleeding time on one occasion 7.5 min. and on another 16 min. The gastric analysis showed free HCL 32, total acidity 104. The blood calcium was normal. The stools were negative.

The patient received many transfusions with some improvement but finally lost ground rapidly and died.

Dr. Love mentioned that the mother had been an excessive bleeder until the birth of this boy. He asked regarding the relative value of citrated and whole blood for transfusion in such blood dyscrasias. Dr. Musser asked why splenectomy was not considered. Dr. de la Houssaye replied that it had been considered, but the patient had never been a proper surgical risk. Dr. R. Lyons thought splenectomy the method of choice in such cases, with transfusion of whole blood next best. The whole blood transfusion was stated to be definitely more difficult than the citrated method. Dr. J. H. Smith remarked upon the ease with which he had seen a whole blood transfusion done recently with an apparatus, the name of which he had forgotten. Dr. C. Jamison thought the citrated method the more practical method and the method of choice, adding that no one had ever given any definite reasons for believeing that the whole blood method was better than the citrated methods. He thought that the splenectomy had been delayed too long in this case.

The final case was presented by Dr. Mogabgab. It was one of aneurism of the thoracic aorta in a middle aged white female. The aneurism had eroded through the sternum and was presenting as a large pulsating tumor mass about the size of a large grapefrui.

WILLARD R. WIRTH, M. D.

TRANSACTIONS OF THE THE CHARITY HOSPITAL SURGICAL STAFF.

The regular monthly meeting of the surgical staff was held on April 17, 1929, with Dr. P. Graffagnino presiding as chairman. The usual monthly statistical data of the deaths occurring in the various surgical departments were presented. These statistics were approximately similar to the ones during the previous months. It is anticipated that at the completion of the meetings—for the year—the entire group will be collected and published in these columns.

The first case of the evening was that of a very fat negro female, weighing in the neighborhood of 250 pounds. This patient was admitted to the hospital with a strangulated incisional hernia in the region of the umb ilicus. A number of years previously she had been operated for an umbilical hernia, and sometime later for some pelvic pathology. In her present state she presented the picture of a very sick patient. After some difficulty the operation was completed, without the necessity for resection. However, a stormy post-operative course was climaxed with an acute suppression of urine and she died. Autopsy revealed acute and chronic kidneys, paralytic ileus, (with necrosis and gangrene of the ileum), and chronically diseased spleen, liver, and heart.

The case was very liberally discussed, and many interesting points were brought out by Drs. Maes, Danna, Rives, A. C. King, Gage, and Graffagnino.

A white female child, 10 years of age, who died following a very long illness was next presented. This patient had been very thoroughly worked up by the pediatric department, and finally a diagnosis of liver abscess was made. The child died following operation; and a complete autopsy showed an "appendiceal abscess, ruptured gangreneous appendicitis, multiple liver abscesses, general peritonitis, hydrops of the gall-bladder, multiple abscess of the spleen, pericarditis with effusion," and the various other usual findings in a case of septicemia.

This case presented several interesting features and was dicussed by Drs. I. M. Gage, and Graffagnino.

The third case brought forth an interesting discussion on the subject of emergency laminectomies.

A young colored male was shot in the region of the lower cervical spine. Paralysis followed the injury immediately. The usual signs and symptoms observed in these cases were present. The presence and absence of pressure over the jugular veins during the first spinal puncture showed a variation in the reading of from 32 to 18, the latter when the pressure was released. However, after this there seemed to be no difference in the pressure under these circumstances. In this instance an exploratory laminectomy revealed a hopelessly destroyed cord at the site of injury. Death followed the completion of the operation.

The case was discussed by Drs. Anderson, Cook, McIlhenny, M. J. Lyons, Rives, Maes, and Ochsner.

FRANK L. LORIA, M. D.

TRANSACTIONS OF THE PRESBYTERIAN HOSPITAL CLINICAL SOCIETY.

The regular monthly meeting of the staff was held on April 25, 1929, with Dr. John W. Lindner presiding. After the usual order of business several interesting cases were presented and liberally discussed. Those deaths which presented interesting problems were particularly analyzed.

An interesting case was that of a very large toxic adenoma. The case was that of a white female about 50 years of age. The growth was massive and the toxemia pronounced. The patient died about 48 hours following operation.

This case was liberally discussed by Dr. Loria, who stressed the points of (a) not operating on such cases until the basal metabolism is normal or nearly normal, and (b) the "stealing" of the gland which helps considerably in the final re-

sults. Dr. H. R. Unsworth explained that these these cases were primarily and basically neurological problems; and that the neurologist had a certain responsibility in helping to cure these cases.

Following this Dr. H. R. Unsworth presented an interesting case of myelitis resulting from an infection. He explained that the condition was very analogous to poliomyelitis, wherein lay the difference, and the encouraging fact that these cases recover. In this instance the patient was present, and his condition was observed.

One of the most interesting cases the writer has ever heard of was next presented by Dr. E. A. Richard. This was a case of esophageal fistula of the lower third of the esophagus with a transthoracic fistula. Dr. Richard presented the history of this case, as the case could not be present. The patient was a white male, 7 years of age, who had a lobar pneumonia, developed an empyema, and following the throctomy began the discharge of food through the thoroctomy wound at every meal. The case was very thoroughly worked up, and Dr. Richard expects to publish it in full with a review of two other cases that were found in the literature. He asked, for this reason, that more complete account of this case be left until later.

In the discussion that followed Dr. Loria explained that perforation of the thoracic esophagus was practically invariably fatal. It was also said that such fistulae, with rest from irritation, would probably heal spontaneously — as practically all other fistulae. Dr. Ader explained that the esophagascope might be of some help in such cases, to locate the exact point of disease, and for local treatment. In addition the case was discussed by Drs. Socola and D. C. Browne.

FRANK L. LORIA, M. D.

VICKSBURG SANITARIUM AND CRAWFORD STREET HOSPITAL STAFF MEETING,

APRIL 10, 1929.

Abstract—Retro-cecal gengrenous appendicitis, with general peritonitis (tentative diagnosis), of three weeks standing.—Dr. J. A. K. Birchett, Jr.

Patient—Colored, male, age 26; occupation, store-keeper.

Complaint—Pain in abdomen in region of liver, radiating to back; fever; loss of strength; inability to get bowels to move.

Past History—No serious illnesses; general health good; malaria in 1927; denies veneral disease.

Present Illness—Suddenly taken ill three weeks ago, with severe pain in abdomen with nausea. Physician was called and gave something for pain: Three days later unable to get bowels to move and vomited foul smelling material; fever and abdominal discomfort. Bowels finally moved by enemata but fever and abdominal discomfort continued. Several days later again unable to obtain bowel movement and began to have severe cramps. Patient's wife administered salts and Pluto water and pain in abdomen became worse. Physician was again called and gave hypodermic injection for pain. Fever then went as high as 105° F.; abdomen was much distended; pain very intense in region of gall bladder and right lower costal margin.

Patient was seen in consultation at this time and diagnosis of peritonitis was made with possible sources of infection perforated ulcer, cholecystitis, or appendicitis. Hospitalization was advised and patient was admitted. On admission, pulse was 130; blood pressure 120/90; liver dullness unusually high on right; abdomen rigid, flat, and "boardy", and very tender in upper right quadrant and around to lumbar region. X-ray showed diaphragm on right in normal position.

Examination of blood showed: erythrocytes, 3,800,000; leukocytes, 28,000; differential count —small lymphocytes, 11 per cent, large lymphocytes, 5 per cent; polymorph. neutrophiles, 84 per cent; no malaria; Wassermann and Kahn tests negative. Urine examination showed nothing remarkable.

The condition appared to be that of peritonitis following ruptured or perforation of an abdominal viscus. Patient was too ill for surgical interference. Blood transfusion and glucose were given and condition became gradually better. On the third day after admission, Widal test was positive for typhoid. With this important evidence, the case unfolded itself—typhoid fever with perforation and general peritonitis.

Abstract—Carcinoma of the gallbladder—excision—Dr. A. Street.

Patient—White, female, aged 55 years married; never pregnant. Admitted to hospital April 10, 1929.

Complaint—Typical gall bladder colic, beginning five days ago; chill, fever, and persistent nausea and vomiting. Feels worse every second day. Bowels move freely but no clay stools.

Previous History—Frequent headaches for years; influenza recently. Impaired vision in right eye, which oculist told her was due to a

general disorder. Appetite and digestion good until onset of present attack, but has lost 56 pounds of weight in the last three years.

Family History—Not remarkable.

Physical Examination—Temperature 102° F.; pulse 90; respiration 20; blood pressure 125/80. Patient appears quite ill and weak. Slight jaundice. Respiration with a grunt, but not accelerated. There is marked tenderness in the right upper abdomen, increased by deep inspiration. Also definite tenderness in the right lower abdomen. No rigidity; no masses.

Blood—Hemoglobin 67 per cent; leukocytes 10,000; differential leukocyte count, small lymphocytes, 4 per cent neutrophils, 96 per cent; no malaria found. Blood urea nitrogen 11.2 mg. per 100 cc.; blood Wassermann negative.

Urine—Normal except for rare pus cells.

Gastric Contents—Total acid 41; free HC1, 24; combined acide 8; chemical, blood + +.

Cholecytography — Questionable gall bladder filling.

Radiographic—Stomach, duodenum and colon show no abnormal findings.

Hospital Course—Patient was given glucose solution intravenously, and no food by mouth. Nausea promptly subsided and general condition improved so that small amounts of nourishment were well taken. Operation of April 22, high right rectus incision. Stomach and duodenum normal; appendix normal. Dome of the fundus of gall bladder contains a densely indurated area, 3/4-inch in diameter, which fuses into the liver. Area of gall bladder proximal to this shows a thickened gray wall and contains fluid and one stone, 3/4-inch in diameter. Cholecystectomy was done, removing a layer of liver at the site of the growth.

Tissue pathology by Dr. Lippincott, shows adeno-carcinoma of the gall bladder (group III). The liver tissue shows chronic hepatitis and superficially a few cancerous cells. Culture of the fluid in the gall bladder shows profuse growth of bacillus typhosus.

Convalescence quite uneventful. Patient discharged from hospital in good condition on May 9, 1929.

Absract—Peritonitis of obscure origin.—Dr. J. A. K. Birchett, Jr.

Patient—Colored, female, age 16 years, school gir and waitress. Admitted to hospital April 19, 1929.

Complaint—Pain in lower abdomen with cramps, began yesterday morning after eating breakfast. Was sitting in chair when cramp like pain was felt in the pit of the stomach and referred to lower abdomen. No desire to defecate; no urinary disturbance. Vomited but pain continued. Was given some milk of magnesia with slight relief. Patient was then admitted to the hospital with the advice of immediate operation for appendicitis. This was refused by the patient's parents. Ice bag and palliative measures were used for twenty-four hours when there was a chill and rise of temperature of 103° F.

Past History—No serious illnesses. Denies any venereal or urological symptoms. No previous digestive symptoms. Menstrual history normal.

Hospital Course—The abdominal signs became more marked with rigidity and abdominal pains becoming general. At this time the parents were prevailed upon to have an operation performed. The abdomen was opened under ether anesthesia and a good exposure obtained, through a McBurney incision. The peritoneum was congested; the viscera distended and purplish in color. There was a puddle of thick purulent exudate in depth of the incision.

The appendix was grayish and covered with plastic exudate but not perforated. Appendix removed by cautery. The pelvis was exposed through physical examination had been negative. There was purulent exudate in the cul-de-sac and over both tubes, ovaries and uterus but the tubes were not adherent and were normal in size and shape. Had the general appearance of the other serous membranes. The upper abdomen was examined and a similar pool of pus found under the liver surface and gall bladder. The stomach and duodenum were normal, with no sign of perforation. The various pockets were drained and patient was able to be up on the eighteenth postoperative day, the only discomfort has been slight ileus and distention which cleared up on the eighth day.

As far as I can see, the source of the abdominal infection is obscure, unless it was a minute perforation of the appendix without the usual local signs. The case certainly began with the symptoms of an acute appendicitis.

Microscopic examination of the appendix showed some chronic inflammatory and an acute inflammatory limited to the surface.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

During the month of May besides the regular meeting of the Board of Directors, the Society held two scientific meetings.

At the meeting held Monday, May 13, papers were read and discussed as follows:

"Bacillary Dysentery in Louisiana", by Dr. Daniel N. Silverman; discussed by Dr. C. W. Duval, Dr. E. C. Faust, and Dr. Silverman, closing.

"Spinal Anesthesia," by invitation, Dr. Earl Garside; discussed by Dr. Urban Maes, Dr. Wilmer Baker, Dr. Frank L. Loria, Dr. H. W. Kostmayer, Dr. E. Denegre Martin, Dr. Monroe Wolf, Dr. A. Mattes, Dr. H. R. Unsworth, and Dr. Garside, closing.

"Some Results with Potassium Sulphocyanate in Hypertension," by Dr. P. J. Saleby; discussed by Dr. George Herrmann.

At the meeting held Monday, May 27, papers read and discussed as follows:

"The Oral Cavity in Certain Systemic Diseases", by Dr. John H. Musser; discussed by Drs. P. H. Jones, Jr., H. Dupuy, Chaille Jamison, D. N. Silverman and F. M. Johns.

"Prognostic Value of Daily Spinal Fluid Sugar Determination during Specific Serum Therapy of Meningicoccal Meningitis", by invitation, Dr. J. H. Watkins; discussed by Drs. F. M. Johns, I. I. Lemann, J. H. Musser, P. H. Jones and Chaille Jamison.

"Post-Partal Care", by Dr. Walter Levy; discussed by Drs. E. L. King and H. E. Bernadas.

"Report on Medical Meetings held in Atlantic City", by Dr. Roy H. Turner.

The following members were elected to membership in the Society:

Active Members—Drs. John R. Flowers, Hebert W. Knight, E. S. Peterman and Jas. Lennard Smith.

Associate Member—Dr. Henry B. McIntyre.

An endeavor is being made to bring the list of active members up to 500. The members of the Board of Directors have been given the names of doctors in Orleans Parish who are not members of the Orleans Parish Medical Society and application blanks have been sent to these men.

During the past month bills were sent to the members carrying group insurance for the third quarterly premium of 1929. This premium will be due on June 5 and the members are requested to send in their checks by the first of June in order that the Society may send its check to the home office on the due date.

TREASURER'S REPORT.

Actual Book Balance March 31	$2,947.37
Receipt for insurance	195.60
Receipts during April	1,870.86
	$5,013.83
Expenditures in April	$4,049.51
Actual Book Balance	$ 964.32

LIBRARIAN'S REPORT

Three hundred and sixty books have been added to the Library during April. Of these 17 were received by purchase, 19 from the New Orleans Medical and Surgical Journal, 113 by binding and 211 by gift. A list of the new titles of recent date is appended.

Three bibliographies have been added to our files, on subjects as follows:

Cannabis Indica, Mariahuana and Hashish .

Hemangioma of the Head.

Osteomata, Glioma and Carcinoma of Orbit.

The work of sorting and arranging the vast amount of Journal material given us by Dr. Van Wart has been finished. The files we have been able to add to our collection from this source will be of immense value to the library and every effort should be made to complete and bind them as soon as possible.

Gifts of books and journals have been received from the following persons and agencies:

Mrs. E. H. Eyer.
Dr. John A. Lanford.
Dr. H. R. Unsworth.
Dr. C. Jeff Miller.
Dr. J. H. Musser.
Dr. E. L. King.
Dr. Rena Crawford.
Jackson County Medical Society, Kansas City.
Academy of Medicine, Toronto.
South Carolina College of Medicine.
Tulane Universiay School of Medicine.
Hoagland Laboratory, Brooklyn.
New York State Medical Society.

American Surgical Association.

Rhode Island Medical Journal.

State Medical Library, Des Moines.

NEW BOOKS—APRIL

Goepp—State Board Questions and Answers, 1920.

National Tuberculosis Association, Transactions, 1921.

Ballou—Ear, Nose and Throat Surgery, 1925.

Rockefeller Foundation—Hookworm and Malaria Research in Malaya, Java and Fiji Islands, 1920.

Coffey—Angina Pectoris, 1927.

Mellish—Wilson—Writing of Medical Papers, 1928.

Brooks—Angina Pectoris, 1929.

Leriche—Normal and Pathological Physiology of Bone, 1928.

Ibotson—Partnerships, Combinations and Antagonisms in Disease, 1929.

Miller—Outlines of Gynecology for Students, 1927.

Rolleston—Aspects of Age, Life and Disease, 1929.

Pruitt—Injection Treatment of Hemorrhoids, 1929.

Miller—Hemmorrhoids, 1929.

Jerman—Modern X-Ray Technique, 1928.

Forrester — Imperative Traumatic Surgery, 1929.

Yeomans—Proctology, 1929.

Lambourne—Qualitative and Volumetric Analysis, 1928.

Harrower—Endocrine Diagnostic Charts, 1929.

Garrison—History of Medicine, 1929.

Manson-Bahr—Tropical Diseases, 1929.

Stitt—Diagnosis and Treatment of Tropical Diseases, 1929.

Lord—Pneumonia, 1929.

Graham—General Surgery, 1928.

Beeuwkes—American Med. and Sanitary Relief in the Russian Famine, 1921-23, 1926.

Philadelphia Zoological Society — Report of Laboratory and Museum of Comparative Pathology, 1926 and 1928.

Truitt—Child Guidance Clinic and the Community, 1928.

International Congress of Military Medicine and Pharmacy, Report, 1927.

Directory of Anesthetists, 1929.

N. Y. State Medical Society. Report of a Committee to make a study of Heart Disease in the State of New York, 1928.

American Surgical Association Transactions, 1928.

H. THEODORE SIMON, M. D.
Seretcary.

GOLF NEWS.—The first regular meeting of the Orleans Parish Medical Society's golf enthusiasts was held at the Metairie Golf Club, at the instigation and under the able management of Dr. Allan Eustis, Wednesday, May 29.

Some forty odd physicians, distinguished for their ability as doctors, rather than expert golfers, teeded off during the afternoons festivities. Cards were handed in by practically all the players who knew they had an opportunity of winning some prize of some kind if they only concealed their pride in their game and submitted their scores, no matter how high they were.

The first prize was won by the eminent pediatrician and ex-champion of the Louisiana State Medical Society, Dr. L. R. DeBuys, with the magnificent score of 89 gross, 70 net. The winner virtually spread-eagled his field, shooting a superb game, although some were so unkind as to insinuate that nineteen was a very remarkable handicap for such an accomplished master of the mashie and dealer in drivers.

The prize for the worst score was contested much more strenuously than was the battle for first place. The charming gentleman and eminent surgeon but exorable golfer, Dr. T. B. Sellers, by taking five putts on the last green managed to take one more stroke than the famous pathologist, Dr. C. W. Duval and the illustrious internist Dr. I. I. Lemann who averaged even eights for the eighteen holes.

Blind holes were also contested but the eventual prizes fell to those who exhibited as much skill in indoor golf as the outdoor game. These splendid exponents of Scotish and African Golf who were rewarded with a dozen balls, were Drs. E. H. Lawson, Warren Rosen, Conrad Collins and Temple Brown.

The kickers tournament fell into the waiting hands of Dr. Harris, who proved himself an excellent guesser as well as a splendid companion, but only a mediocre golfer.

The collation, served at the Club House proved to be a feast of food and a fiesta of reason. It is hoped that another tournament will take place in June and that these meetings will occur monthly during the summer at the different clubs in the vicinity of New Orleans.

"A good time was enjoyed by all."

LOUISIANA STATE MEDICAL SOCIETY NEWS

H. Theodore Simon, M. D., Associate Editor.

REPORT OF THE HOUSE OF DELEGATES TO THE GENERAL ASSEMBLY.

New Orleans, April 11, 1929.

To the Officers and Members, Louisiana State Medical Society.

Gentlemen:

The House of Delegates held three meetings during the Session of the Society, and transacted all official business presented to it. The officers, councilors and committees made their reports, and recommendations and subject matter were disposed of.

The following officers were nominated and elected:

President—Dr. Frank T. Gouaux, Lockport.

President-Elect—Dr. H. B. Gessner, New Orleans.

First Vice-President—Dr. C. M. Horton, Franklin.

Second Vice-President—Dr. F. C. Bennett, Monroe.

Third Vice-President—Dr. Roy B. Harrison, New Orleans.

Chairman House of Delegates—Dr. J. J. Ayo, Raceland.

Secretary-Treasurer—Dr. P. T. Talbot, New Orleans.

Past President—Dr. L. J. Menville, New Orleans.

Councilors:

First District—Dr. H. E. Bernadas, New Orleans.

Second District—Dr. Urban Maes, New Orleans.

Third District—Dr. C. C. DeGravelles, Morgan City.

Fourth District—Dr. S. C. Barrow, Shreveport.

Fifth District—Dr. D. I. Hirsch, Monroe.

Sixth District—Dr. John McKowen, Baton Rouge.

Seventh District—Dr. D. C. Iles, Lake Charles.

Eighth District—Dr. G. M. G. Stafford, Alexandria.

Delegate to American Medical Association—Dr. J. Q. Graves, Monroe.

Alternate-Delegate to A. M. A.—Dr. D. I. Hirsch, Monroe.

Next meeting of the Society will be held at Shreveport, Louisiana.

The following committees were re-elected:

Committee on Scientific Work: Dr. P. T. Talbot, Chairman; Dr. A. E. Fossier, Dr. Elizabeth Bass; all of New Orleans.

Committee on Public Policy and Legislation: Dr. B. A. Ledbetter, Chairman; Dr. E. L. Leckert, Dr. Roy B. Harrison, Dr. P. T. Talbot; all of New Orleans; Dr. Frank T. Gouaux, Lockport.

Committee on Publication: Dr. P. T. Talbot, Chairman; Dr. Chas. Chassaignac, Dr. Jules Dupuy; all of New Orleans.

Committee on Medical Defense: Dr. E. L. Sanderson, Shreveport; term of three years.

Committee on Hospitals: Dr. Chas. Chassaignac, Chairman, New Orleans; Dr. J. L. Scales, Shreveport; Dr. O. P. Daly, Lafayette; Dr. C. P. Gray, Monroe; Dr. A. J. Comeaux, Youngsville.

Committee on Health and Public Instruction: Dr. W. H. Seeman, Chairman; Dr. F. R. Gomila; both of New Orleans; Dr. G. M. G. Stafford, Alexandria; Dr. J. Q. Graves, Monroe; Dr. J. K. Griffith, Slidell.

Committee on Journal: Dr. Randolph Lyons and Dr. W. H. Seemann, both of New Orleans; for a term of three years each.

A committee from the East Baton Rouge Parish Medical Society submitted a report in relation to contract practice. Same was referred to the Council.

An amendment to the By-Laws was offered creating members at large whereby various government medical officers and etc. can be taken in as members of the State Society. The dues of the State Society were increased from $4.00 to $7.00.

The House of Delegates accepted the offer made by Tulane Medical College to provide for official quarters for the Louisiana State Medical Society in their proposed new building with thanks.

A very extensive report was made by Dr. Rudolph Matas, Chairman of the Committee on

History of the Louisiana State Medical Society. The House of Delegates viewed with favor the manner in which this work had been conducted and renewed their intentions of financing the project until its completion. It will be necessary to secure from those who have not already subscribed their willingness to aid this work in order that we may raise funds sufficient for its completion.

Resolutions were offered asking that the United States Government through their proper officers retain the present Veterans' Bureau Hospital located in Algiers for clinical purposes.

Suitable resolutions thanking the various agencies in New Orleans for their manifestation of cordiality and entertainment were passed as follows:

Whereas, The members and guests of the Louisiana State Medical Society who have been in attendance upon the 1929 meting in the City of New Orleans are deeply appreciative of the many courtesies received, we beg to submit the following:

Be it Resolved, That we extend most sincere thanks to the members of the Orleans Parish Medical Society for their untiring and most effective efforts to make our stay in their midst pleasant and profitable, and especially do wish to thank the Committee on Arrangements and Entertainment, Dr. Paul J. Gelpi, Chairman, for contributing so much to our comfort and pleasure as well as to the success of the scientific and business programs,

Be it Further Resolved, That we extent our thanks to the Roosevelt Hotel for the splendid manner in which they have taken care of us,

Further Resolved, That we are deeply grateful for the delightful hospitality of the Soniat Memorial Mercy Hospital, Touro Infirmary, French Hospital, and the Tulane University College of Medicine,

Be it Further Resolved, That our thanks be extended to the press for the generous space devoted to our proceedings,

Be it Further Resolved, That our thanks be extended to the Ladies' Entertainment Committee, Mrs. C. V. Unsworth, Chairman; and to the Metairie Golf Club.

Be it further Resolved, That our thanks and appreciation be extended to our retiring President, Dr. Leon J. Menville, for his devotion and energetic effort which has contributed to the successful history of our Society for the past year.

Be it Further Resolved, That we extend our most profound thanks to our worthy and efficient Secretary-Treasurer, Dr. P. T. Talbot, for the splendid manner in which he has conducted the affairs of his ofice, which has been evidenced by the outstanding progress manifested in our State Society, and the high character of the scientific program offered at our present meeting,

That our thanks be also extended to our Assistant Secretary-Treasurer, Miss Mary V. Crossen, for her devotion to duty and discharge of work which has at all times been manifested,

Be it further Resolved, That we give expression to our appreciation of the splendid executive ability displayed by the Speaker of the House of Delegates, which has so signally characterized the administration of the present incumbant, Dr. J. J. Ayo.

Respectfully submitted,

P. T. TALBOT,
Secretary-Treasurer.

DR. GRANGER HONORED.

In recognition of his achievement in the science of radiology, on Thursday, April 24, 1929, Dr. Amedee Granger, head of the Department of Radiology in the Graduate School of Medicine of The Tulane University of Louisiaan and director of the Roentgen-ray Department of Charity Hospital, was awarded the Gold Palmes Universitarires by the French Government. This is the highest university decoration awarded by France, and confers the title of officer of public instruction on the recipient. This honor has been awarded to only one other person coming under the jurisdiction of the consulate general of New Orleans.

Dr. Granger received the decoration from Maurice de Simonin, Consul-general of France in New Orleans.

The Palmes Universitaires (silver) was awarded Dr. Granger by France in 1921, in 1926 he received the gold medal from the Radiological Society of North America and in 1927 was given the first prize for the best individual scientific exhibit at the Radiological Society's annual convention, Alpha Omega Alpha, honorary medical fraternity, presented him with the key of honorary membership. He is past chancellor of the College of Radiology, an organization of Roentgen-ray specialists with a membership limited to 100, and holds honors in several National and Southern medical societies.

HEALTH OF NEW ORLEANS.

During the week ending May 4, there were total deaths of 154 with a death rate of 18.8. Practically the same figures of the corresponding week of last year. During the week of May 11, total deaths were 155 with a death rate of 18.9, a gain virtually unchanged from last year.

P. A. Dental Surgeon (R) S. P. Marshall. Directed to proceed from San Francisco, Calif. to Carville, La. by way of New Orleans, La., for the purpose of taking into custody at convenient places six leper patients, and accompany them to Carville.

On May 8, 1929, Prof. C. S. Holbrook, Asst. Professor of Psychiatry in the Graduate School of Medicine, addressed the School of Social Work of Tulane University of Louisiana on "Psychoses of the Affective Type."

Dr. Walter J. Otis, Assistant Professor of Neurology in the Graduate School of Medicine of the Tulane University of Louisiana, attended the following meetings held in Atlanta, Ga., from May 13, to May 17, 1929:

The American Psychiatric Association.

The American Psychiatric Association for the Study of the Feeble-minded.

The American Psycho Analytic Association.

The American Psycho Pathological Association.

Dr. Urban Maes left the city on April 24, 1929, for an absence of two weeks, to attend the meetings of The Thoracic Surgical Society, The Clinical Surgical Society and The American Surgical Association.

On May 1, 1929, Dr. H. Daspit addressed the School of Social Work of the Tulane University of Louisiana on "The Fundamentals of Psychiatry."

On May 8, 1929, Dr. C. S. Holbrook addressed the School of Social Work of the Tulane University of Louisiana on "Psychoses of the Affective Type."

ST. TAMMANY PARISH SOCIETY.

Meeting of St. Tammany Parish Medical Society on May 3 was held at the Mandeville Hotel, Mandeville, La., at eight o'clock at night. Those present were the President, L. Roland Young, and H. D. Bulloch of Covington, A. G. Maylie and R. B. Paine of Mandeville. There being no quorum all formalities were dispensed with. Valuable talks by Drs. Lucien Ledoux and Randolph Unsworth of New Orleans were very much appreciated and created quite a bit of discussion. These two good Doctors were the guests of the evening. All had a good time and things were in the form of a regular round table discussion. After the meeting sandwiches and coffee were served.

L. ROLAND YOUNG, M. D., President,
St. Tam. Pr. Med. So. and acting Secretary.

THE SALMON MEMORIAL.

Hon. George W. Wickersham announces the establishment of the Thomas William Salmon Memorial to provide recognition to the scientist who had made the greatest contribution in the fight against mental disease during each year. Awards are to be national and inter-national and will provide for the wider dissemination of the knowledge of mental hygiene and insanity through cooperation with the New York Academy of Medicine, in whose hands the Administration of the $100,000 fund is to be placed.

The Acting Surgeon General of the United States Public Health Service announces that the Second International Malaria Congress will be held in Algiers, May, 1930.

The Scientific Session of the American Heart Association will be held in Portland, Oregon, on July 9, 1929, during the meeting of the American Medical Association.

The officers of the Louisiana Dermatological Society for 1929-1930 are as follows:

President, Dr. M. T. Van Studdiford; vice-president, Dr. R. A. Oriol; secretary-treasurer, Dr. T. A. Maxwell.

UNITED STATES CIVIL SERVICE EXAMINATION.

The United States Civil Service Commission announces the following open competitive examination:

BACTERIOLOGIST

Applications for bacteriologists must be on file with the Civil Service Commission at Washington, D. C., not later than July 3.

The examination is to fill a vacancy in the United States Public Health Service, Honolulu, Hawaii. The entrance salary is $4,000 a year.

TRAINED NURSE—TRAINED NURSE (PSYCHIATRIC).

Applications for trained nurse and trained nurse (psychiatric) must be on file with the Civil Service Commission at Washington, D. C., not later than June 25.

ANNUAL REPORT OF THE EYE, EAR, NOSE AND THROAT HOSPITAL.

The thirty-ninth Annual Report of the Eye, Ear, Nose and Throat Hospital shows that during the course of the year 1928, there was a grand total of 123,960 admissions to the Eye Department, and 169,177 to the Ear, Nose and Throat Department. There were 6,014 operations performed during the year. Despite the magnificent work that this institution is doing, Dr. Chassaignac, Superintendent, shows that support is inadequate to meet the cost of running the institution. He suggests that the fine work must be lessened by curtailing the volume of free work if more money cannot be secured. He adds that "a third possibility, that of a lower degree of service is simply unthinkable."

A CORRECTION.

Through a misinterpretation of the stenographic notes made at the meeting of the House of Delegates, it was announced in last month's Journal that Dr. Hiram Kostmayer was elected third vice-president. On the contrary, Dr. Kostmayer simply nominated Dr. F. C. Bennett, of Monroe, who was elected. The editor wishes to apologize to Dr. Bennett for this error.

CORRESPONDENCE.

The following is a copy of a letter sent to the secretaries of all district and parish societies:

Woman's Auxiliary.

New Orleans, La., May 20, 1929.

Dr. H. T. Simon, Secretary,
Orleans Parish Medical Society.
Dear Doctor Simon:

During the late meeting of the State Medical Society the Woman's Auxiliary was organized.

As you know, "The object of the Auxiliary shall be to extend the aims of the Medical Profession, through the wives of the doctors, to the various women's organizations which look to the advancement of health and education; to assist in entertaining at all meetings of the State and local medical societies; and to promote acquaintanceship among the doctors' families, that closer fellowship may exist."

The membership of this Auxiliary shall be limited to wives of physicians in the parish, district, or, in the absence of one or the other just mentioned, the State Medical Society. Daughters, mothers and sisters of physicians may be elected to membership. Those holding membership in the Louisiana State Medical Society, Woman's Auxiliary may of their election become members of the Southern Medical and the American Medical Associations, Woman's Auxiliary on payment of annual dues.

Until otherwise directed the dues for membership in this Auxiliary shall be one dollar per annum for each member.

As Secretary of the Orleans Parish Medical Society you are respectfully requested to bring this subject to the attention of the wives of your membership and we sincerely hope they will meet at an early date, organize and notify us. Our officers will gladly co-operate and we bespeak your assistance for the good of the cause.

Yours very truly,

MRS. OSCAR DOWLING.

The following ladies are the officers of the Woman's Auxiliary:

President—Mrs. Oscar Dowling, 1662 Valmont Street, New Orleans, La.

Vice-Presidents—Mrs. A. A. Herold, 1166 Louisiana Avenue, Shreveport, La.; Mrs. H. W. E. Walther, 424 Pine Street, New Orleans, La.; Mrs. J. A. White, 1740 Jackson Street, Alexandria, La.; Mrs. R. McG. Carruth, New Roads, La.

Secretary—Mrs. H. B. Gessner, 119 Audubon Boulevard, New Orleans, La.

March 28, 1929.

Dr. P. T. Talbot,
Manager New Orleans Medical and Surgical Journal,
New Orleans, La.

Dear Doctor:

I am mailing you under separate cover a typewritten copy of a paper on "Medical Ethics" which I read before the Bienville Parish Medical Society twenty-five or thirty years ago. I do not remember the year in which it was read but it was a short time after the visitation of this country by yellow fever the last time, as appears by reference to that subject in the paper. The Society before which it was read has had barely a nominal existence for a number of years and no records are available by which the exact date can be determined. I came across the manuscript a short time ago and it occurred to me that its publication in your Journal might be helpful in some respects to the younger generation of physi-

cians and possibly a pleasant reminiscence to some of the older members of the profession who may have heard me read the paper, if per chance there be any living. Not being personally acquainted with the editor-in-chief I am sending the copy to you which you may, if you will, submit to him, and if he and yourself consider it worthy a place in your Journal you may publish it. If not, kindly return the manuscript and there will have been no harm done. I am not offering the paper for publication because of any learning or merit it possesses but on account of the professional attitude and spirit it seeks to inspire. I some times fear that the profession of the present day is losing sight of the ethical side of the practice of medicine. I find the American Medical Association and myself were born in the same year and I have been a student and practitioner of medicine for considerably more than sixty years of this time, and during all these years have been a reader of the New Orleans Medical and Surgical Journal, and in my humble and feeble way have endeavored to uphold the honor and traditions of the profession. Am a member of the American Medical Association and of the Louisiana State Medical Society, and since 1915 have been an honorary member of the last named body.

With personal regards and best wishes, I am,

Sincerely yours,

F. M. THORNHILL, M. D.

(Am also member of Southern Medical Association.)

TO THE MEMBERSHIP.

Gentlemen:

As you known, this society has for a number of years, at the request of its members, been endeavoring to secure group insurance for the benefit of its members. At our last convention, a proposal was brought in at the last hour. It was brought over for the executive meeting, May 11, and it is now with pleasure we advise of its acceptance.

The Federal Union Life Insurance Company of Cincinnati, Frederick L. Walther, State Agent, 209 N. O. Bank Building, has offered a graded by age contract as follows:

Age 1 to 49 inclusive, $3000 for $39 per annum.

Age 50 to 59 inclusive, $2000 for $26 per annum.

Age 60 to 65 inclusive, $1000 for $13 per annum.

This is the group formula and cannot be changed. Each member in his respective group age takes the amount above mentioned "payable annually." It is the identical rate that the Orleans Parish Medical secured two years ago. A Master Policy and Roster showing each member will be issued to the Louisiana State Society; a certificate to each member showing the amount of his insurance and his designated beneficiary.

Any member leaving the society will be allowed the privilege of coverting his group certificate in to any standard form of life insurance, without any examination or evidence of insurability, if requested within 30 days of his retirement from the society.

Now it is up to us—we must secure 51 per cent of our membership to put this over and the enclosed card with your check attached must be in our hands not later than June 15, 1929, which is the closing date. It is hoped you will reply at once—"We want this group coverage", "We must secure 51 per cent," "The time limit is short", —sign and complete the card, attach your check made payable to P. T. Talbot, Secretary—"Mail today".

We thank you,

P. T. TALBOT,
Secretary-Treasurer.

DR. F. T. GOUAUX, President.

The above communication has been sent out to the members of the Louisiana State Medical Society. To those whose notices may have gone astray for some reason or other, we would respectfully urge that you give this important opportunty of medical organization your serious and prompt consideration and return to us the cards properly executed along with check for the required insurance. This opportunity for group insurance should be eagerly supported by the members of our profession, being a real benefit to accrue as a member of organized medicine. We must get fifty-one per cent of our membership, and those interested in this proposition should use their powers of infulence to explain to the membership the merits of this group insurance at such a small premium should be most attractive and appealing from an economical viewpoint.

—P. T. T.

MISSISSIPPI STATE MEDICAL ASSOCIATION NEWS

J. S. Ullman, M. D., Associate Editor

REPORT OF HOUSE OF DELEGATES.

The twenty-sixth annual session of the House of Delegates of the Mississsippi State Medical Association met on the Roof Garden of the Markham Hotel, Gulfport, May 14, 1929, at 8:15 A. M., with President W. H. Frizell presiding. Roll call showed twenty-nine members present.

Dr. W. L. Little was elected a member of the Budget and Finance Committee to succeed himself. Dr. J. S. Ullman was selected to represent Dr. Albert Hand on this committee during his absence.

The following report of the Secretary was read and received:

To the House of Delegates,
Mississippi State Medical Association,
Gulfport, Mississippi.

Gentlemen:

At the meeting of the Association in Meridian in 1928 the Committee on Budget and Finance in its report to the House of Delegates recommended that the annual dues of the Association be increased from three to five dollars. At the same meeting D. W. Jones and D. J. Williams introduced the following change in the By-laws:

"Change Section 1, Chapter X, of the By-laws, to read in part as follows:

"Section 1. An assessment of four dollars ($4.00) per capita on the membership of the component societies is hereby made the annual dues of this Association, one dollar of which shall be set aside and used exclusively as a Medico-Legal Fund."

The membership of the Association has reached a high water mark, there being 1042 members for 1928. This is a healthy growth over recent years.

Charters have been issued during the year to the "Northeast Mississippi Thirteen Counties Society," and to the "Tri-County Society." These were the only ones applying for charters.

Respectfully submitted,

(Signed) T. M. DYE, Secretary.
May 14, 1929.

The Secretary's financial report was automatically referred to the Committee on Budget and Finance as was the Treasurer's report.

The report of the Committee on Arrangements was made by W. A. Dearman.

The following committee reports were received: Education, Publication, Scientific Work, Necrology and Hospitals.

At this point a recess of five minutes was had for the purpose of appointing a Nominating Committee by Council Districts. The selection resulted as follows:

1. J. W. Lucas, Morehead.
2. P. W. Rowland, Oxford.
3. J. Rice Williams, Houston.
4. T. J. Brown, Grenada.
5. Henry Boswell, Sanatorium.
6. J. W. Cooper, Meridian.
7. H. L. McKinnon, Hattiesburg.
8. R. D. Sessions, Natchez.
9. W. A. Dearman, Gulfport.

The following by-law, introduced at the 1928 session, was called up and adopted:

"Section 1. An assessment of four dollars ($4.00) per capita on the membership of the component societies is hereby made the annual dues of this Association, one dollar of which shall be set aside and used exclusively as a Medico-Legal Fund."

The following resolution by the Northeast Mississippi Thirteen Counties Medical Society was read by Secretary Dye:

To the House of Delegates, Mississippi State Medical Association.

Gentlemen:

The Northeast Mississippi Thirteen Counties Medical Society, assembled in regular session at Okolona, March 19, 1929, one hundred members present, wish to offer the following resolutions:

1. Be it resolved, That we favor the creation and adoption of a Mississippi publication for the printing of all papers presented before the annual meetings of the Mississippi State Medical Association.

2. Be it resolved, That the transactions of the Mississippi State Medical Association together with those of the Woman's Auxiliary be printed separate from the papers and bound in a volume suitable for preservation.

(Signed) JAMES M. ACKER, Jr.,
Secretary.

The House then adjourned to meet again at 8 A. M., May 15.

The House of Delegates reassembled at 8 A. M. of May 15 pursuant to adjournment on May 14. Roll called showed forty-two present.

C. W. Patterson, Rosedale, fraternal delegate to the Arkansas State Society, made a report of his visit.

The Committee of Public Policy and Legislation made a verbal report.

A resolution introduced by Willis Walley instructed the Chair to appoint a committee to report on the advisability of creating a section on hospitals. The Chair appointed J. W. D. Dicks, W. L. Little and G. S. Bryan with instructions to report at the next meeting of the House.

A special committee appointed by W. H. Frizell during the year, composed of W. H. Anderson, E. F. Howard, J. S. Ullman and D. W. Jones, to investigate the feasibility of establishing a State Medical Journal, reported as follows:

To Dr. W. H. Frizell, President, Mississippi State Medical Association:

Your committee appointed to consider the question of whether or not the Mississippi State Medical Association should undertake the publication of its own journal, wishes to submit the following information, without recommendation:

I. (a) The circulation of a Mississippi Medical Journal would not be greater than one thousand, the outside figure on membership.

(b) Whereas under the present arrangement with the New Orleans Medical and Surgical Journal we have a circulation of about twenty-five hundred.

II. (a) Under the present arrangement with the New Orleans Medical and Surgical Journal we are paying ninety cents per subscription, and out of this we get back $300 per year paid out to Mississippi Editor for office expenses.

(b) With a State Journal, handling papers for county societies, as well as the State Association papers, the per capita cost would be about $3.00 per year for the first year, and about $2.00 per year thereafter.

(c) This would necessitate an increase in dues of the State Association of $2.00 per capita for the first year and $1.00 each thereafter.

Respectfully submitted,

(Signed) W. H. ANDERSON,
E. F. HOWARD,
J. S. ULLMAN,
D. W. JONES.

The same committee had been instructed to report on the publication of a history of the Association. Their report follows:

To Dr. W. H. Frizell, President, Mississippi State Medical Association:

Your committee appointed to consider the advisability of the Association compiling and printing a history of medicine in Mississippi, wish to report that we heartily endorse the suggestion, and recommend its execution.

(Signed) W. H. ANDERSON,
E. F. HOWARD,
J. S. ULLMAN,
D. W. JONES.

On motion of Joseph Green this Committee on Medical Journal was instructed to continue investigations and report next year.

That part of the report relating to the history of the Association was adopted.

Several proposed changes in the Constitution and By-laws were read by the secretary and laid on the table for consideration at the next meeting of the House of Delegates.

The House of Delegates adjourned to meet at the close of the final adjournment of the General Session on the sixteenth.

Thursday, May 16, 1929.

The House of Delegates reassembled as per adjournment on the preceding day at ten thirty-five, Thursday morning, in the Ball Room of the Markham Hotel, President W. H. Frizell in the chair. Roll call showed fifty-four members present.

The following resolution was adopted:

"Resolved, That the Secretary of the Mississippi State Medical Association is hereby authorized and empowered to make application for $3,000.00 additional group insurance for those members of said Association who desire this additional protection.

Be it further resolved, That said Secretary is not authorized to create any liability for said Association as a whole or its members individually, but each member must subscribe for and pay for his own group insurance."

The following vote of thanks was offered by J. S. Ullman and adopted by a rising vote:

"Resolved, That the Mississippi State Medical Association in session at Gulfport, May 14-16, 1929, express its thanks for and appreciation of the hospitality and courtesies shown by the Harrison-

Stone-Hancock Society, the City of Gulfport and the management of the Markham Hotel, and to all others who contributed to our comfort and entertainment."

The following proposed changes in the By-Laws introduced at Wednesday's session were called up and adopted:

"Change Chapter IV, Section 1, by adding: 'The Section on Radiology may meet independently and separately of the General Session.'"

"Change Chapter VII, add Section 5, as folows: 'To the Historian shall be committed the duty of compiling and preparing for publication a history of the Association, which shall then be kept complete and written to date yearly. He shall make an annual report to the House of Delegates, which report must pass the scrutiny of the Committee on Publication.

For the proper functioning of this office a provision shall be included in the yearly budget."

Chapter IX, Section 1, add to the list of committees that shall not be appointed by the President the following: "The Committee on Publication."

Chapter IX, Section 4, change to read as follows:

"The Committee on Publication shall consist of three members, an Editor and two associates: The Editor shall be named to hold office for a term of five years and the associates for terms each of two years, one associate being chosen at each annual meeting of the House of Delegates. This Committee shall be empowered to curtail or abstract papers and discussions, and any paper referred to it may not be suitable for publication may be returned to its author.

"This Committee shall have authority over all publications of the Association unless otherwise provided for.

"All papers read before the Association shall be its property.

"An appropriation to provide for its proper functioning shall be included in the yearly budget."

T. E. Ross of Hattiesburg, one of the delegates to the 1928 session of the American Medical Association, made his report which was received.

The Committee on Budget and Finance reported a follows, which report was adopted:

To the House of Delegates:

Gentlemen:

Your Committee on Budget and Finance has audited the reports of the Secretary and Treasurer and approves them.

The Treasurer, having asked instructions regarding the investment of the Defense Fund, is advised to invest in preferred securities of the sort generally purchased by conservative bankers, keeping on call, or in time certificates and amount sufficient to care for probable immediate needs. Such investments are to be made with the approval of the finance committee.

We recommend payment of the following accounts:

Councillor Jones	$18.00
Councillor Robertson	2.50
	$20.50

We offer the following budget for adoption:

President's expense account	$100.00
Secretary's salary	500.00
Secretary's expense	100.00
Editor's expense	300.00
Council's expense	100.00
New Orleans Medical and Surgical Journal (approx.)	1,000.00
Transactions	100.00
Incidentals	50.00
Expenses of meeting (stenog., etc.)	300.00
Committee Public Policy and Legislation	250.00
	$2,800.00

(Signed) E. F. HOWARD, Chairman;
W. L. LITTLE,
J. S. ULLMAN.

J. W. D. Dicks reported for the Committee appointed to look into the advisability of adding a Section on Hospitals to the Scientific Sections as follows:

"Your Committee recommends that instead of adding a new section that the name of the Section on Hygiene and Public Health be changed to read 'Section on Public Health, Hygiene and Hospitals.'"

This report was held for one year.

The Council reported through its secretary as follows:

"The Council met, as per notice, at 2 P. M.

Present—Dr. D. J. Williams, D. W. Jones, M. W. Robertson, J. W. Lucas, J. S. Donaldson, J. W. D. Dicks.

Absent—W. G. Gill, Sixth District; E. M. Gavin, Seventh District.

The Councillors filed their reports on the progress of medical organization in their respective districts.

A request from the doctors of Pike County to be allowed to withdraw from the Tri-County and form a County Society of their own, was granted and a charter ordered to be issued accordingly.

The Harrison-Stone-Hancock Society filed application for a new charter, and the Council recommends its issuance.

An appropriation of fifty dollars was voted for Dr. W. W. McRae, Corinth, Miss., to cover expense of expert testimony in the case of Perkins vs. McRae. In this case, the doctor won in a law suit carried through the Supreme Court. But he was insured in a protective association which took care of his lawyer's fees.

The Council wishes to go on record that it will ask for the resignation of any member thereof who failed to attend all the meetings of the Council, unless unavoidably prevented from doing so.

The Council wishes again to call attention of the membership to the method of procedure in case a member desires the Association to assist in the defense of a malpractice suit. This procedure is outlined in detail in Chapter Fourteen, Section Five, of the By-Laws.

Several meritorious cases have been turned down because the Council was not consulted in advance and given an opportunity to pass upon the merits of the case, as provided by the said By-Laws.

(Signed) DAN J. WILLIAMS, Chairman.
D. W. JONES, Secretary."

On nomination of S. W. Johnston, seconded by D. W. Jones, Vicksburg was selected by acclamation as the meeting place of the Association in 1930.

After the reading and adoption of the minutes of the preceding sessions the Norminating Committee reported as follows:

To the House of Delegates of the Mississippi State Medical Association:

Herewith is the report of the Nominating Committee:

President—Dr. Hugh Gamble, Dr. W. H. Anderson, Dr. W. G. Gill.

Vice-President—Dr. J. C. Cully, Dr. L. L. Minor, Dr. E. C. Parker.

Council:

First District—Dr. J. W. Lucas.

Members State Board of Health:

Sixth District—Dr. W. A. Dearman, Dr. W. W. Crawford, Dr. Joe E. Green.

Seventh District—Dr. N. L. Clark, Dr. W. H. Frizell, Dr. M. D. Ratcliff.

Eighth District—Dr. W. H. Watson, Dr. John Darrington, Dr. S. W. Johnson.

Delegate to the American Medical Association—Dr. W. H. Frizell.

Alternate—Dr. Henry Boswell.

Fraternal Delegate to Alabama—Dr. J. W. Lipscomb.

Fraternal Delegate to Arkansas—Dr. C. W. Patterson.

Fraternal Delegate to Louisiana—Dr. J. S. Ullman.

Fraternal Delegate to Tennessee—Dr. M. W. Robertson.

Respectfuly submitted,

(Signed) W. A. DEARMAN, Chairman.
I. W. COOPER, Secretary.

W. G. Gill, rising upon a point of personal privilege, asked that his name be withdrawn as one of the nominees for president.

E. F. Howard and H. K. Tippin were appointed tellers. The vote for president resulted in the selection of H. A. Gamble, and the Chair declared him elected. W. H. Anderson moved that the election be made unanimous.

On motion of J. S. Ullman the Secretary cast the vote of the House for the remaining nominees, whereupon the House of Delegates adjourned to meet in Vicksburg May 13, 1930, at eight in the morning.

(Signed) T. M. DYE, Secretary.

The main building of the South Mississippi Charity Hospital, Laurel, is undergoing repairs and will get a new coat of paint. A new waiting and rest room for visitors is being built, also a new up-to-date dairy barn.

Dr. Temple Ainsworth, formerly House Physician at the Laurel General Hospital, is now one of the Resident Physicians at the South Mississippi Charity Hospital.

Dr. Oscar Dowling was a recent visitor to Laurel, spending the day with Dr. R. H. Foster.

Dr. Culpepper, Jr., of Honolulu, Philippine Islands, is visiting Laurel.

Dr. May Farinhold Jones, Sanatorium, who has been closely confined to her room since an attack of influenza several months ago, has returned to her native state of Virginia as she thought the change might be beneficial to her condition. Miss Fay Truelove, R. N., accompanied her on the trip to West Point, Virginia. Dr. Jones is missed at the Sanatorium, and her absence will be especially regrettable at the Children's Health Camp this year, where here services in administering to the ills of the camp kiddies were so valuable.

The State Children's Health Camp will be opened for the summer on June 3 this year with twenty-five children, and will operate for three months caring for three different groups of children.

The regular monthly staff meeting of the Vicksburg Sanitarium was held on May 10. Their program was as folows:

1. "Carcinoma of the Gall Bladder," Dr. A. Street.
2. "Peritonitis," Dr. J. A. K. Birchett, Jr.
3. "Intestinal Obstruction," Dr. H. H. Johnston.
4. "Atypical Pneumonia," Dr. J. Pearse O'Leary.

DR. H. A. GAMBLE,
PRESIDENT, MISSISSIPPI STATE MEDICAL ASSOCIATION.

Our new president needs no introduction to the profession of this state for he has long been known as a surgeon and a student. Dr. Gamble was born in Lee County, Mississippi, in 1876. His education was received in the public schools of his county and obtained his A. B. from the Mississippi Agricultural and Mechanical College. He was graduated in medicine by Tulane University in 1904. After practicing three years in Fairview, Louisiana, he moved to Greenville in 1907 where he has been in practice ever since.

Two hundred and sixty members were in attendance at the state association meeting and enjoyed Gulfport's hospitality which was quite up to its usual standard.

EFFECT OF LIVER ON BLOOD SUGAR LEVEL.—A study made by Harry Blotner and William P. Murphy, Boston, of the effect of liver feeding on the blood sugar indicates that whereas previously liver has been regarded as an unsuitable article of food for diabetic patients because of its glycogen content, it is now known to have a beneficial effect on the blood sugar of these patients. The liver fractions that are effective in the treatment of pernicious anemia have no effect on the blood sugar, whereas certain liver fractions that are ineffective in the treatment of pernicious anemia have an effect on the blood sugar like that of liver. Four patients with diabetes taking liver daily or from three to five times a week have been observed with repeated blood sugar determinations for approximately one year, while in two who were followed for twenty and thirty days it was found that the blood sugar has remained at a constantly lower level than previous to liver therapy. These observations suggest that liver contains a blood sugar reducing substance active when taken by mouth, nontoxic, and with an effect on the blood sugar concentration similar to that obtained with insulin. It is difficult to estimate the quantity of liver that will replace a known amount of insulin, but the authors feel that 180 Gm. of liver will have an effect on the blood sugar of diabetic patients equal to that of from 10 to 15 units of insulin.—Jour. Am. Med. Assn., 92:1332-1336, 1929.

OUT OF HIS LINE.—On the question of vivisection the voices of two notables have been heard recently in Baltimore. One was Dr. William H. Welch, a physician, the other Mrs. Irene Castle, a dancer.

Surely, it is unnecessary for The Evening Sun to explain that it has the highest respect for Dr. Welch. Yet, if the question at issue had involved either dancing or clothes and anyone had called on Dr. Welch to express an opinion on it we should have regarded the effort to drag him into it as downright silly.—Baltimore Evening Sun.

BOOK REVIEWS

Lipiodol in the Diagnosis of Thoracic Disease: By F. G. Chandler, M. A., M. D. (Cantab.), F. R. C. P. (Lond.), and W. Burton Wood, M. A., M. D. (Cantab.), M. R. C. P. (Lond.). New York, Oxford University Press. 1928. p. 133.

An excellent monograph on a most important subject. The nature and history, the therapeutic value, the indications, contra-indications and limitations and the methods of use are all treated briefly but most satisfactorily. Some may object to the bare treatment given the simple "swallowing" method and the recommendation of the more difficult and dangerous crico-thyroid route. The references to the literature are numerous. The numerous illustrations are excellent.

I. L. ROBBINS, M. D.

The Diagnostics and Treatment of Tropical Diseases: By E. R. Stitt, A. B., Ph. G., M. D., Sc. D., L.L. D. 5th ed. rev. Philadephia, 1929. P. Blakiston's Son & Co. 1929. pp. 918 249 illus.

This beautifully and substantially bound volume by the Dean of American Tropical Medicine is far more than its name implies. It is an all-round manual of tropical diseases, including the etiological, biological, and epidemiological, as well as pathological and clinical aspects of the subject. The subject-matter is satisfactorily grouped, so that the reader by glancing at the table of contents may readily find the general topic in which he is interested. A careful study of any one chapter provides sufficient information to give an intelligent background for the particular disease. Thus such topics as malaria, the trypanosomiases, amebic dysentery and amebic hepatitis, bacillary dysentery, cholera, plague, leprosy, the filterable-virus diseases, hookworm and filarial infections and the schistosomiases all receive careful consideration, while the more recently recognized entities, tularaemia, melioidosis and Oroya fever are also included. The chapter on yellow fever includes mention of the recent transmission work of Bauer (1928) in West Africa and the vaccine investigations of Hindle (1928), while the work of Kirby-Smith, Dove and White on "creeping eruption" due to the larvae of Ancylostoma braziliense, also receives mention, although under the strange section of "Larvae Causing Myiases."

Well-balanced discussions of the deficiency diseases, with particular stress on beriberi, pellagra and sprue, are presented. In view of the general distribution and importance of fungus diseases of the skin and viscera in the tropics, it seems unfortunate that more space is not given to the section.

Over two hundred pages are devoted to clinical and laboratory diagnosis, in which there is found a wealth of valuable information not only on diagnosis but on the preparation of media and cultures, methods of examination of the body excreta and anatomical and physiological normals.

With a volume such as Admiral Stitt has made available for American practitioners in warm climates there is little need to look to foreign sources for information or inspiration in this important field of American medical practice.

ERNEST CARROLL FAUST, Ph. D.

Qualitative and Volumetric Analysis for Medical Students: By H. Lambourne, M. A., M. Sc., F. I. C., and J. A. Mitchell, M. Sc. London, Oxford Univ. Press. 1928. pp. 64.

The first part of this hand-book contains in condensed form a considerable mass of information about qualitative chemical analysis, particularly inorganic but with some attention given to organic substances. In the remaining two-thirds of the booklet, there are discussed in detail various volumetric quantitative methods. Normal solution are described and their value indicated. Implicit explanations with the use of numerous equations may be said to be a feature. A student familiar with the material presented here would be well prepared to study the methods of biochemistry of importance in medicine.

R. C. CORLEY, Ph. D.

Spinal Anesthesia: By Charles H. Evans, M. D., with Introduction by W. Wayne Babcock, M. D., F. A. C. S., and Foreword by Charles Gordon Heyd, M. D., F. A. C. S. New York, Paul B. Hoeber. 1929. pp. 203.

With the present widespread interest in spinal anesthesia, Dr. Evans' monograph comes as a timely contribution. He has given a survey of the literature which is thorough and is evaluated with fairness. The author's experience leads him to prefer novocaine (neocaine), and the technique outlined concerns the method of using this drug in pure crystalline form. It is gratifying to notice the conservative attitude which is adopted and is emphasized especially by chapters on Complications, Mortality and Causes of Failures.

In the foreword Dr. Heyd has appropriately written, "A perusal of Dr. Evans' monograph will indicate when, how, and why the surgeon should employ spinal anesthesia."

Racial Hygiene: Thurman B. Rice, A. M., M. D. New York, The Macmillan Company. 1929. pp. 376.

Although misnamed this is an excellent publication. It does not deal with hygiene, in the sense that we commonly use the term, but rather with eugenical problems. The first part of the book treats mainly with the mechanism of heredity, thus furnishing the background for the important discussions of the problems of eugenics that follow. Sociological problems are discussed from the standpoint of heredity. The author, throughout the book, makes a strong appeal to those of hereditarily superior quality to face the danger of being overrun by the hereditarily inferior. Scientific evidence to support his statements is not lacking.

The book is clearly and interestingly written and cannot help furnishing food for thought among those interested in preserving our American white stock. Technical terminology is omitted as far as possible without sacrificing scientific accuracy. An attempt is made to treat the subject in such a way that the general reader, without biological training, may know and understand the facts concerning human heredity and racial betterment. It is a contribution well worth reading and is a valuable addition to the all too meager list of books on scientific subjects that the general reader is able to understand.

IRVING GRAY, A. M., Ph. D.

Methods of Biological Assay: By J. H. Burn, M. A., M. D. (Camb.). London, Oxford University Press. 1928.

This small volume is a combination of manual and criticism of proposed and accepted biological assay methods. Repeated reference is made to the reports of the 1925 Geneva Conference. Technique is described for the assay of the digitalis group, posterior pituitary, insulin, arsen-obenzene, ergot, adrenalin, ovarian hormone, parathyroid hormone, thyroid, and several other substances of less general interest. The assay of vitamins is not mentioned. Worthy of careful study by those interested in this field, it is not a complete guide for use in this country.

B. J. C. REYNOLDS, B. Sc.

Year Book of General Surgery: Ed. by Evarts A. Graham, A. B., M. D. (Practical Medicine Series.) Chicago, Year Book Pub. 1928. pp. 800.

The present volume gives in abstracted form the annual review of the surgical literature of the world, laying stress as usual on many articles of particular interest which have been published during the year.

Among these is the work that suggests the control of paralytic-ileus by splanchnic anesthesia; the treatment with satisfactory results of varicose veins by injection methods; the good results obtained in the treatment of erysipelas by Birkhaug's serum; the use of iodin both in the prevention and treatment of goiter and that in all sorts of infections in various parts of the body the iodin content of the thyroid gland is greatly reduced.

The more recent work on the origin of acute dilatation of the stomach and the controversy of gastro-enterestomy versus extensive resection of the stomach in cases of peptic ulcer, which is still going on unabated, are discussed at length. The author feels that the enthusiasm for extensive resections in cases of peptic ulcer represents only a passing fad and fancy.

The entire book is not only easily readable, instructive and practical but also gives an authoritative answer to the salient practical points of current surgical progress in a condensed and easily obtainable way.

PAUL G. LACROIX, M. D.

Pneumonia: By Frederick Taylor Lord, M. D., A. B. Cambridge, Harvard Univ. Press. 1929. pp. 84.

This is the second edition of an excellent brief monograph on the subject of Pneumonia. The most notable advances in the various phases of the disease are discussed.

I. L. ROBBINS, M. D.

Contribution to the Study of Heredity in Tuberculosis: By Dr. R. Pla y Armengol, Director of the Institute Ravetllat-Pla, pp. 1-45, Oct., 1926.

On the Variability in the Reactions of the Specific Products of Tuberculosis. pp. 1-19, Dec., 1927.

The Polymorphism of the Tuberculous Virus: By Dr. F. J. Velez, Former Intern of the Rothschild Sanitarium of Berck Plage, France.

Short Course on the Surgical Tuberculoses: By Dr. Joaquim Lopez, Abadia, Surgeon to the Bilbao Hospital. Illus. 1925. pp. 1-166.

Contribution to the Experimental Study of Nuclear Inversion (the Velez Sign) in Tuberculosis. pp. 1-19, by Dr. Pla y Armengol and associates. pp. 35.

The above publications (in Spanish) from the Institute Ravetllat-Pla, of Barcelona, Spain (founded by Drs. Ravetllat and Pla for the study and treatment of tuberculosis) have been received.

The preponderance of the trinuclear type of polymorphonuclear neutrophiles in the differential leukocyte count is sufficient to exclude the diagnosis of tuberculosis. With blood of normal individuals the binuclear neutrophiles constitute an average of 34-35 per cent; and the trinuclear represents 41-43 per cent. In normal individuals the number of the trinuclear polymorphoneutrophiles is always in excess of the binuclear neutrophiles.

Whenever the binuclears exceed the trinuclear polynuclear neutrophiles in the differential count, it is then said that "inversion in the nuclear count" has occurred. This is known as the "Velez sign" of tuberculosis. In their experimental and clinical research the authors show that nuclear inversion as above described is a constant accompaniment of active tubercular processes. This sign, however, is not specific or pathognomic of tuberculosis, since it has been observed in cancer and leprosy and as a transitory sign in other experimental infections in the guinea pig (typhoid and diphtheria, staphylococcal, streptococcal, micrococcus, melitensis and avian coccobacteria), but clinically its constant presence in acute tuberculosis makes the "Velez nuclear inversion" a valuable differential blood character when cancer and leprosy can be excluded.

These and other contributions of great value from the clinical and experimental point of view are issued periodically from the Institute and are available to all students interested in tuberculosis by addressing directly to the Institute in Barcelona, Spain.

R. M.

Practical Clinical Laboratory Diagnosis: By Charles C. Bass, M. D., and Foster M. Johns, M. D. 3d ed. rev. Baltimore, The Williams & Wilkins Company. 1929. pp. 187.

The third edition of this well known clinical laboratory guide has been entirely rewritten, recast, and in part re-illustrated. However, the original idea has been adhered to of including in the volume only the clinical laboratory procedures that are practical and may be carried out efficiently by a man in active practice. Only the simplest and most useful methods have been described. This necessarily makes for dogmatism, but specific, positive and definite statements are of value in outlining various tests which have become more or less standardized as a result of long use by the authors, who are certainly more than well qualified to select their subject matter. The book is admirably printed, the illustrations are clear cut, well selected, while some of the colored plates are really magnificent artistic efforts. The reviewer has to congratulate the authors on their splendid work. The medical profession is fortunate in having such a clear cut well written practical book on laboratory diagnosis for their use.

J. H. Musser, M. D.

Surgery in the Tropics: By Sir Frank Powell Connor, D. S. O., F. R. C. S., D. T. M. & H. Philadelphia, P. Blakiston's Son & Co. 1929. pp. 293.

The scope of this book is for the most part confined to the surgical aspects of tropical diseases and their complications. An ordinary knowledge of surgery, surgical pathology and after-treatment is taken for granted; hence, most of these details are omitted. Also, due to the limitation of time, a fuller discussion of the tropical aspects of the surgery of neoplasms, abdominal surgery and special branches of surgery have been omitted.

The entire book, especially the chapters on Filiarisis, is replete with many very excellent and wonderfully clear illustrations.

On account of its brevity this book can act, as its author says, only as a supplement to the many excellent text-books of tropical medicine.

Paul G. Lacroix, M. D.

Recent Advances in Neurology: By W. Russell Brain, M. A., D. M. (Oxon.), M. R. C. P. (London), and E. B. Strauss, B. A., D. M., B. Ch. (Oxon.), M. R. C. P. (London). Philadelphia, P. Blakiston's Son & Co. 1929.

The scientific results by our London confreres are revealed in this latest book on neurological subjects and collaterals. The book details special subjects and procedures with what may be termed a compilation of regional neurology inasmuch as it gives to us the abnormal functions with their sequelae of various locations of the cerebrum and cerebellum. It is of the newer plan of placing these studies before the medical profession inasmuch as when one is in search of certain symptoms concerning certain neurological ailments, one has only to turn to paragraph or chapter in the book which directly enlightens as the case requires.

The chapter describing the Spinal Fluid is interesting and complete, likewise the one on Epidemic Encephalitis. Sleep, Normal and Pathological, in Chapter 14, is given much detail reading, the authors having gone into this most conclusively with special reference to pathological sleep, which today is given more cognizance than heretofore, as many of us are dealing with post-war psychic episodes which we are constantly meeting in ex-service men.

It is interesting to note their resume on Therapeutic Malaria which is illuminating.

The resume of terms is carried out sequentially and thoroughly. The reproduction of radiograms are unusually clear, distinct and perfectly readable. To sum up, these authors demonstrate through this volume the complete understanding with the proper up-to-date handling of this, Recent Advances in Neurology.

WALTER J. OTIS, M. D.

Urological Roentgenology: By Hugh H. Young. M. D., and Charles A. Waters, M. D. New York, Paul B. Hoeber, Inc. 1928. pp. 496.

This excellent contribution by Young and Waters forms volume seven of a series of monographic atlases entitled the annals of roentgenology. The work is illustrated with 518 urograms and drawings by Didusch. Nothing so pretentious has yet appeared on the subject of roentgenologic diagnosis in urological conditions. The work might easily be considered a complete post-graduate course in the diagnosis of genito-urinary lesions as brought out by means of roentgen-ray aid.

In the introduction Young emphasizes the necessity of combined efforts of roentgenologist and urologist, if we are to expect accurate diagnoses in many obscure lesions of the urogenital apparatus. He illustrates his point with case-records and accompanying roentgen-ray films. The topography, anatomy and physiology of the urinary tract are fully dealt with. The chapter on renal anomalies form one of the most interesting in the book. The cases observed of solitary kidney with two ureters and two pelves are of particular interest to those doing renal surgery and who, even today, will attempt nephrectomy without being absolutely certainly that the patient has two kidneys to begin with. Too much praise cannot be given Didusch for his drawings. Fig. 116, for example, of bilateral cystic kidneys, made at autopsy, definitely establish Didusch's work as probably the best that is being done in America today.

The urograms and the case-records illustrating obstructive conditions of the urinary tract are unusually good. In the chapter dealing with urogenital infections and infestations again the urograms of Waters graphically depict the lesions so well described in the case-records. The entire work is one of case-records illustrated so beautifully that, as has already been stated, it is a post-graduate course of the highest type and a copy of this book is sadly needed in every hospital library as well as in the library of every urologist and general surgeon doing urological work.

Tuberculosis of the genito-urinary tract is given proper attention. Urinary lithiasis occupies 109 pages of the work, mostly urograms and photographs. The experiences at the Brady Urological Institute with stone has been most vast, as is plainly seen by the interesting photographs of the innumerable variety of calculi observed by Young at this Clinic. The use of the opaque catheter and shadow-casting media, in localizing stone, is demonstrated in a long list of roentgenograms.

Tumors of the urogenital tract have, up until recently, been missed in too many instances of hematuria of so-called idiopathic type. The urograms Waters shows, especially those in which tumors of the renal pelvis was demonstrated, are most convincing. Cystograms, where one suspects bladder tumor or prostatic new-growth or diverticular, furnish most valuable information. This is particularly true in those instances where, for one reason or other, cystoscopy proves impractical. There is an index to the text at the end of the book which makes it easy for one to quickly locate the subject in which he is interested and thereby compare case-histories and urograms with his own cases under investigation. This work fills a place long vacant among the list of books necessary for the intelligent practice of urology.

H. W. E. WALTHER, M. D.

Modern X-Ray Technic: By Ed. C. Jerman. Saint Paul, Bruce Publishing Co., 1928. pp. 260.

The author of this book is well known to the American radiologists. He has contributed from time to time interesting and instructive articles on x-ray technic. His great experience as an x-ray technician gives his book instant approval and it will be of valuable service, not alone to the beginner in roentgenology but also to those of more experience.

There are twenty-one chapters, and 248 pages in this book, along with many interesting and beautiful illustrations. The author gives a clear explanation of the most modern methods employed in producing accurate and beautiful roentgenograms.

LEON J. MENVILLE, M. D.

Aspects of Age, Life and Disease: By Sir Humphry Rolleston, Bart., K. C. B., M. D., Hon. D.Sc., D. C. L. LL.D. New York, The Macmillan Co., 1929. pp. 304.

This volume of papers dealing on subjects allied to medicine is worthy of note by all physicians. The material and the mode of treatment reflects the literary skill and the extensive knowledge and reading of the author.

I. L. ROBBINS, M. D.

The Normal and Pathological Physiology of Bone: Its Problems: By R. Leriche and A. Policard. Authorized English translation by Sherwood Moore, M. D., and J. Albert Key, M. D. St. Louis, C. V. Mosby Company. 1928. pp. 236.

The book is the result of ten year collaboration by the authors. The problem of osteogenesis has passed through many phases. It has been histological and surgical. It is now the turn of the chemists and physicists. When they have solved certain pending questions, it will be possible to resume with profit the studies of the past. We can then progress, and, perhaps, have bone formed at will, accelerate the union of fractures, and prevent the pathological and physiological rarefactions of bone. The translators believe that the work should prove useful to the orthopedic surgeon, the general surgeon, the orthodontist, and above all, the radiologist. Of particular interest are the chapters on the Repair of Fractures, on Transplantations and on Heterotopic Ossifications.

HENRY LAURENS, Ph. D.

Angina Pectoris: By Harlow Brooks, M. D. New York, Harper & Brothers. 1929. pp. 164.

A very splendid treatise on an extremely important disease by one of the best known authorities in the country. It can be read with tremendous profit by the physician whether interested primarily in cardiology, or concerned with some other branch of medicine.

J. H. MUSSER, M. D.

Partnerships, Combinations, and Antagonisms in Disease: By Edward C. B. Ibotson (Lond.), B. S. Philadelphia, F. A. Davis Company. 1929. pp. 348.

This volume is not a presentation of original work done by the author. The observations have been drawn from the work of a wide field of investigators in England, Europe and the United States and to these the author has contributed liberally from his own wide experience. It is not an attempt to present disease from the standpoint of symptoms, signs and treatment, but rather to present the many disease groups from the broader aspect of their relationship and interrelationship one to the other.

One of the notable things of this volume is the swing of the pendulum backwards to the old theories of the Diatheses. This will be observed in the heading of several chapters: Relations of Diatheses, Relations of Tuberculosis and Diatheses.

The author has goine to great length to set forth the many factors which may influence, for good or bad, the tendencies of the various disease groups. For example, under the general heading Tuberculosis we find such sub-groups: Tuberculosis and Cancer, Tuberculosis and Syphilis, Syphilitic Phthisis Overlooked, Syphilitic Soil, etc. The reviewer has enjoyed the opportunity reading this volume and feels that he has been much benefitted thereby. The subject matter is of much interest, instructively presented and quite up to date.

J. HOLMES SMITH, JR., M. D.

Imperative Traumatic Surgery, With Special Rerference to After-Care and Prognosis: By C. R. G. Forrester, M. D., F. A. C. S. New York. Paul B. Hoeber, Inc. 1929. pp. 464.

The entire book is a presentation of the author's personal experiences and as such gives only the methods which have been successful in his hands.

Emphasis is placed upon the immediate treatment, prognosis and after care of traumatic conditions. The responsibility of the surgeon both to the injured and the company is discussed at length. The necessity for the more frequent use of the roentgen-ray as an adjunct in traumatic surgery is briefly but clearly discussed. The chapter on Injuries to the Head is rather inadequate. Too much stress is placed on the now obsolete classification of head injuries with reference to the location and type of fracture of the skull and the use of hypertonic saline solution in perference to glucose solution to reduce intra-cranial tension; the former on account of its toxicity should be mentioned only to be condemned. The chapter on Peripherial Nerve Injuries is direct, clear and brief, including at the same time the important points relating to the diagnosis, prognosis and treatment. Another noteworthy feature is that the operative treatment of fractures is recommended only when all other methods have failed.

As this book deals entirely with the personal experiences of the author, it cannot be classed as a complete and standard text on traumatic surgery; in this respect, it can only be of limited value to the surgeon doing this particular work.

PAUL G. LACROIX, M. D.

The Writing of Medical Papers: By Maud H. Mellish-Wilson. Philadelphia, W. B. Saunders Company. 1929. 3rd Edition. pp. 184.

A small book that should be on the desk of every medical man who does any writing whatsoever. Filled with helpful suggestions as to arrangements of manuscripts, carrying rules of punctuation, grammatical notes as well as standard abbreviations for preparation of bibliographies, the book should be of inestimable value to the prospective author.

J. H. MUSSER, M. D.

An Ouline of Gynecology for Students: By C. Jeff Miller, M. D., F. A. C. S. New Orleans, Privately printed. 1928. pp. 271.

As stated by the author, this work of 271 pages is written solely for the purpose of affording a convenient manual for the use of students. Naturally, only the essentials of the subject are covered, controversial topics being eliminated. Descriptions of operations, as well as illustrations, are likewise eliminated, the student being referred to the standard textbooks for these details.

The various gynecological conditions are thoroughly yet concisely discussed, and the presentation is particularly valuable and authoritative because of the author's wide experience and mature judgment. A wise conservatism is the dominant note, yet radical measures are advocated in situations demanding their employment.

The book is well written and hence is thoroughly "readable", and will serve a useful purpose in the field for which it is designed. It merits more than merely local circulation.

E. L. KING, M. D.

Pathology for Students and Practitioners: By Edward Kaufmann, M. D., tr. by Stabley P. Reimann. Philadelphia. P. Blakiston's Son & Co. 1929. 3v.

This monumental work on Pathology, in three volumes will be most welcome to the pathologist and all students of medicine. The author has interwoven embryology, anatomy, physiology, patthologic physiology, pathologic anatomy, and appropriate clinical features into an harmonious whole. There are twelve groupings under which diseases are discussed in gratifying detail, as digestive, respiratory, etc.

A complete index accompanies each volume and the third volume contains 224 pages of bibliography. The very numerous illustrations, appearing on almost every page, obviously add greatly to the work. Few details are shown by actual high magnificative photo-micrographs, but the author more than makes up for this by the many informative sketches, diagrams and full legends which serve to convey ample knowledge of the subjects pictured.

The aim of both the author and translator is to make this work something more than a discussion of dead tissue, and in this they have succeeded. Professor Reimann, deserves great praise and thanks for his translation and for his own contributions to the subject matter embodied in his supplementary remarks.

The reviewer feels that this is a vast mine of information which will be consulted and appreciated by many.

S. J. LEWIS, M. D.

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